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PART II.

Personal Ornaments.

By R. SHELFORD, M. A., F. L. S., etc.
Curator of the Sarawak Museum.

This part of the illustrated catalogue treats only of the objects worn for decorative purposes by the natives of Borneo at the present day or in the immediate past, the objects forming no part of an essential body covering or attire. Consequently such articles as caps, hats, jackets or kirtles decorated with bead-work, metal rattles, cowries etc. are not included in this part of the catalogue, they must be catalogued subsequently under some such heading as Dress or Festal Attire. Similarly I have excluded the antique ornaments and fragments of ornaments that are found frequently by native gold-seekers in the head-waters of the Sarawak river and elsewhere in Sarawak and of which there is a small collection in the Sarawak Museum; they all seem to belong to a former civilization merely transitory in Borneo.* An exception has been made in favour of the antique beads of uncertain origin so largely worn in necklets and girdles by the men and women of most Bornean tribes; these are shortly discussed in their proper place in this paper.

The question of the relationship between magic and personal ornamentation has not been lost sight of and many enquiries on the subject have been set afoot, without, however, eliciting much information of any importance. In face of the facts recorded from other parts of the world, it seems in the highest degree probable that certain ornaments of some Bornean tribes were also endowed once with a magical significance, and it is possible that the restriction of the wearing of certain ornaments at the present day to individuals of a given social standing or at certain periods only of their lives* is a relic of magical powers more appreciated in the past than nowadays. As might naturally be expected it is among the more primitive Borneans that ornaments functioning also as charms are met with. Thus, Kalabit youths when visiting new districts wear a necklet of decorative seeds as a charm against evil spirits; Land-Dyak men also wear a necklet of beads and the canines of leopard and bear when away in a strange country, the beads are frequently regarded as charms against specific diseases and the whole ornament is regarded as valuable enough to buy off the wearer's life if that is threatened by spirit or human enemy. The necklet worn by the Land-Dyak female witch-doctors described below is a badge of office and magic resides in the charms attached to the necklet but not in the necklet itself. Kyans and Sea-Dyaks often wear round the wrist a string on which is threaded an antique bead, this is a sign that once the wearer was ill and lost temporarily his vital spark (*Samengat*), but that subsequently it was recovered, whereupon he or a witch-doctor tied it in with the beaded string to prevent it from escaping again; but this bead can hardly be regarded as an ornament, it is a charm pure and simple and in fact a carpal bone of the mouse deer or even a tatu mark is often substituted for it. These are practically the only examples of "magical ornaments" that I have encountered, but a few more references to the restrictions imposed on the wearing of other ornaments will be found scattered throughout the catalogue.

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* For an account of and a suggestion as to the origin of some gold ornaments found at Limbang in Northern Sarawak in 1900 see MAN 1903 No. 2. "Note on a collection of Gold Objects found in Sarawak, in the possession of His Highness the Rajah of Sarawak" by C. H. Read.

I have been able to arrive at no better classification of Ornaments than the following:—

1. Ornaments worn in the hair and in a head-dress.
2. Ornaments worn in the ears.
3. Ornaments worn on the neck.
4. Ornaments worn on the limbs.
5. Finger rings.
6. Ornaments worn round the body.
7. Buttons and buckles.

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*e. g. amongst the Kyans only those who have taken heads are allowed to wear ear-pegs made from the canines of the clouded leopard, and amongst the Sea Dyaks only married women are supposed to wear brass corsets.

Ornaments worn in the hair and in a head-dress.

I. Hairpins.
II. Combs and Tiaras.
III. Fillets and Head-bands.
IV. Head-dress ornaments.

I. HAIRPINS.

1. Murut—"pleng."

These are flat pointed strips of deer's horn worn by men; Murut men wear their hair long but tie it at the back of the head in a simple knot and the "pleng" is passed through the knot to prevent it from becoming untied. Ling Roth (l.c. vol. ii. p. 59) figures two Murut "pleng" in Dr. Hose's collection, one of which is very like specimen *e* described below.

i. Murut of Trusan district.

a. 19·5 cm. long, 4·8 cm. broad at the top. A border of simple geometrical design is fretted in the upper end; one side (the front) is fluted with seven shallow longitudinal grooves, on the other side (the back) some rough geometrical and phyllomorphic designs are incised.
From the Trusan River. [Pd. 1. xii. 02].
Catalogue No. 1198. (Plate I. fig. 1, *a*).

b. 19 cm. long, 4·7 cm. broad at the top. A very narrow border of simple design is fretted in the upper end; the main part of the ornament is occupied by a fretted phyllomorphic design; above and below this on both sides is incised a zone of double-scroll pattern (*arit blavit*=interlacing); on the back some confused incised lines are mixed up with the fret pattern.
From the Trusan River [Pd. 1. xii. 02].
Catalogue No. 1199 (Plate I. fig. 1, *b*).

c. 18·3 cm. long, 4·2 cm. broad at the top. The top of the ornament is fretted; a simple phyllomorphic pattern with hatched background is incised on the front, a geometrical design (*arit blavit*) bounding it above and below.
From the Trusan River. [Pd. 25. iii. 04].
Catalogue No. 1403.

ii. Peluan Murut of the Upper Padas river, British North Borneo.

d. 28·4 cm. long, 6·6 cm. broad at the top. A square projection at the top; the upper third is covered both back and front with tin-foil, a raised line runs down the centre of the front. On the back of the ornament at the top is stuck a lump of dammar, which serves to hold in position a tuft of goat's hair and a few bright blue feathers from the back of the male fairy bluebird *Irena criniger* ; in the resinous lump are imbedded a seed of *Adenanthera pavonina* and a piece of shell.

Acquired by exchange 9. iv. 04.
Catalogue No. 1409. (Plate I. fig. 1, *c*).

e. 18·6 cm. long, 1·7 cm. broad. An asymmetrical flat pointed strip of deer's horn, not decorated in any way.

Acquired by exchange 9. iv. 04.
Catalogue No. 1410. (Plate I. fig. 1, *b*).

A somewhat similar specimen is figured by Ling Roth (l.c. vol. II. p. 59).

iii. Tagal.*

f. 22·6 cm. long, 5·8 cm. broad at the top. Nearly the whole of the front of the pin is covered with tin-foil, the apex and a short length in the middle alone being uncovered ; the tin-foil is in two pieces, a phyllomorphic design has been fretted in the lower. On the back of the ornament at the top is stuck a lump of dammar which serves to hold a small tuft of goat's hair, and in the resinous lump are embedded two seeds of *Adenanthera pavonina* and a portion of a pale blue bead ; just below this a disc of looking-glass is fastened with dammar to the pin.

From the Upper Padas, British N. Borneo.
Sir P. F. Cunynghame, Bart. [P. 22. viij. 92].
Catalogue No. 747. (Plate I. fig. 1, *d*).

g. 21 cm. long, 6·1 cm. broad at the top. The upper third, both back and front is covered with tin-foil, in front at the top two circular depressions have been ground in the horn and into these have been let two discs of looking-glass; a lump of dammar at the back secures a tuft of goat's hair; two small discs of tin-foil are let into the ornament at the back near the apex, and the back is further decorated with a roughly incised phyllomorphic design.

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*These Tagal are a sub-tribe of the Murut and of course have no affinity with the Philippine Tagalo or Tagal ; they dwell in the highlands forming the watershed of the Upper Padas and Upper Trusan rivers.

From the Upper Padas, British N. Borneo.
Sir P. F. Cunynghame, Bart. [P. 22. viij. 92].
Catalogue No. 748. (Plate I. fig. 1, *e*).

2. Murut—hairpins.

These are boar's tusks, worn by men in the same way as the "pleng."

a. A boar's tusk scraped and ground smooth and white; into the pulp-cavity a tuft of human hair is thrust and secured by dammar. An incised double-scroll design (*arit blavit*) runs round the base of the tusk. 20·5 cm. measured along the outside curve.

From the Trusan River. O. F. Ricketts, Esq. [P. xi. 88].
Catalogue No. 746. (Plate I. fig. 1, *f*).

b. A boar's tusk scraped and ground smooth and white; in the pulp-cavity is fixed a plug of wood shaped like the basal portion of a tusk and prolonging the curve of the tusk to which it is fitted; a piece of looking glass is fixed with dammar on to the end of the wooden plug and a rattan plait round the basal portion of the tusk proper prevents the pulp-cavity from splitting open. One side of the tusk is decorated with two incised phyllomorphic designs, the background of the designs, as is usual in Murut fictile art, being filled in with punctures and hatching. 28·2 cm. measured along the outside curve.

From the Trusan River. [Pd. ix. 02].
Catalogue No. 1167. (Plate I. fig. 1, *g*).

3. Murut (?)—brass hairpins.

a. A flat curved strip of brass, shaped like a narrow knife-blade, one end is pointed, the other is broken; the concave border, corresponding to the back of the knife-blade, is perforated throughout about two-thirds of its length with a series of small holes.

Length (in a straight line) 19·6 cm.; greatest breadth 1·3 cm. Hon. C. C. de Crespigny [P. 4. vii. 78].
Catalogue No. 662 *a*. (Plate I. fig. 2, *a*).

b. Very similar to the preceding but larger; one end is pointed, the other is curled up into a flat spiral; there are fewer holes pierced in the concave border, some of them are supplied with brass rings; there is one hole lower down on the convex border.
Length (in a straight line) 23·3 cm.; greatest breadth 1·7 cm. Hon. C. C. de Crespigny [P. 4. vii. 78].
Catalogue No. 662 *b*. (Plate I. fig. 2, *b*).

These pins are said to be worn by either sex. Their origin seems to be extremely doubtful and this type of hairpin is certainly not known now amongst the Muruts of the Trusan River though, it is quite possible that a former generation used them.

4. Kalabit—"plin."

a. A slender pointed steel rod worn by men in the same way as the Murut "pleng." The blunt end for a distance of 6 centim. is twisted into a close spiral.
Total length 26·2 cm. [Pd. 30. iii. 03].
Catalogue No. 1253. (Plate I. fig. 2, *c*).

5. Dusun—"timbok."

Small metal hairpins worn by women.

a. A flat strip of steel, bent into a slight curve; one end (the upper) is broader than the lower, the sides taper gradually. A small hole is bored in the upper end.
Length (in a straight line) 12·5 cm.; breadth (at top) 1·2 cm. From Kiou, British N. Borneo.
Drs. G. D. and H. A. Haviland coll. [P. v. 92].
Catalogue No. 759. (Plate I. fig. 2, *d*).

b. Very similar, but smaller and made of brass, the lower end less pointed. To the hole in the broad end is attached a long (69 centim.) string of common glass beads of European manufacture, the majority are red, a few blue, green, black and white ones being intermixed; the string at its loose end is made fast to a pearl shirt-button from which depend four short strings of similar beads forming a tassel. The hair is tied in a knot on the top of the head, the pin is stuck through it and the bead string is wound round the base of the knot.

Length (in a straight line) 10·9 cm.; breadth at top 0·9 cm. From Kiou, British N. Borneo.

Drs. G. D. and H. A. Haviland coll. [P. v. 92].

Catalogue No. 760. (Plate I. fig. 2, *e*).

Ling Roth (l.c. vol. II. p. 58) figures a silver hairpin from the Baram River (ex. coll. Peek); it is a slender rod with a star-shaped head and I believe it to be of Malay origin and worn by women.

II. COMBS AND TIARAS.

1. Dusun—wooden combs.

These are worn by women in the knot of hair at the back of the head; * they are usually flat-sided with a long shaped handle (cf. Ling Roth l.c. vol. II. p. 59 and Whitehead, Exploration of Kina Balu, Plate opposite p. 108 fig. X). Whitehead (l.c. fig. IX) figures also a double comb, the teeth springing from each side of a horizontal wooden strip.

a. Wooden comb, with nine teeth and an elongated shaped handle; the two flat sides are decorated with geometrical designs painted on with black resin.

Total length 12 cm. greatest breadth 3·5 cm
From N. of Kina Balu. Mr. Steffen [P. vi. 92].
Catalogue No. 783. (Plate VIII. fig. 1).

2. Malay—"sisir penyu."

a. A broad curved comb of tortoise shell with numerous teeth; the "back" is cut into a scallopped edge. The comb is worn by women at the back of the head just above the knot of hair. Length (measured along the curve) 14·6 cm.; breadth 4·2 cm. [Pd. xii. 02].

Catalogue No. 1213. (Plate I. fig. 2, *f*).

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* No magical significance whatever appears to be attached to these combs or to the patterns on them, as is the case with the very similar combs worn by Semang women of the Malay Peninsula.

3. Malay—"sisir."

a. A silver tiara worn by brides at the marriage ceremony. It consists of a triangular plate of silver, slightly curved; the upper sides of the triangle are scallopped, and a phyllomorphic design is executed in repoussé work on its face. To the middle of the back of the tiara are attached by soldering seven long backwardly directed teeth of silver, and at regular intervals along the upper borders are attached at the back nine slender silver sockets into which are fitted spiral wire springs, each bearing at its summit a silver artificial flower with small diamond shaped pendants. From each of the lower angles hangs a chain of pendants cut out of a thin sheet of silver. The tiara is worn on the top of the head and in front. Length (measured along the curve) 18·4 cm. greatest breadth 6·5 cm.

[Pd. 23. i. 03].

Catalogue No. 1220. (Plate I. fig. 3, *b*).

A somewhat similar ornament is worn high-days and holidays by the more civilized Sea-Dyak women; it was designed by the late F. R. O. Maxwell, Esq., formerly Resident of Sarawak, in response to a request made by some women to invent a new head-gear; for a photograph of a woman wearing this ornament see Ling Roth, l.c. vol. I. p. 4.

Malay brides in the Peninsula wear a rather different form of head-dress for the marriage ceremony. "The bride's hair is done up in a roll *(sanggul)* and this is surmounted with a head-dress of artificial flowers (called *g'rak gĕmpa*), cut out of *p'rada kresek* ("crackling tinsel") and raised on five wires; her forehead is bound with a band or fillet of tinsel—gold-leaf (*p'rada Siam*) being used by the rich—which is called *tekan kundei*, and is carried round by the fringe of the hair *(gigi rambut)* down to the top of each ear (*pelipis*)." (Malay Magic, by W. W. Skeat, p. 378). One of these fillets was purchased by Mr. Skeat and is now in the Cambridge Anthropological Museum; it is decorated with a dragon design.

III. Fillets and Head-Bands.

These are worn by both sexes of a good many tribes; but very few of them, if indeed any, can be rightly classed as ornaments; they are rather articles of dress since their principal purpose is to keep the hair in order and out of the eyes. Such are the "selapok" of the Sea-Dyaks and the "lavong" of the Kyans, plaited bands of rush or split rattan worn by men and the beaded head-bands worn by Kyan, Kenyah and Ukit women (cf. Ling Roth vol. II. p. 59). The Muruts of the Trusan district wear "strings of beads on the head to as many as six rows; these fit the contour of the head and if continued to the top of the head would form a cap; the hair is smoothed down and the end is brought up and passed through inside the strings of beads, forming a long loop a little to one side of the head" (O. F. Ricketts in "Sarawak Gazette" No. 347 p. 241). The beads composing these fillets are large yellow beads of glass and are highly prized. Murut children of both sexes wear a single string of differently coloured beads round the head, and the Murut women of the Lawas River, British N. Borneo wear a narrow fillet (two or three strings only) of differently coloured beads.

Brooke Low (cf. Ling-Roth l.c. vol. II. p. 58) notes that unmarried girls amongst the Sea-Dyaks wear chaplets of sweet-smelling berries; the chaplets are known as "balong."

1. Kenyah—head-rings.

a. Two narrow circles of split rattan, with strips of very finely split rattan, stained black, closely wound round in a vertical direction; on the outside, strips of a yellowish rush are interlaced with the vertical rattan strips, forming a simple pattern of oblique lines in double sets. At one point on each ring a piece of red cloth is wound round and stitched with string.

Diam. 17·5 cm. and 16 cm.; breadth 1·6 cm.

Brooke Low collection. From the Uma Kelap* of the Rejang River.

Catalogue No. 399 *a.* (Plate VIII. fig. 11).

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*Dr. C. Hose considers that these people belong to a division intermediate between the Kalamantan and Kyan-Kenyah divisions.

IV. HEAD-DRESS ORNAMENTS.

1. Malay—"tajok."

a. A pair of ornaments worn on each side of the head-dress by bridegrooms at the marriage ceremony. Each ornament is a branched wire stalk covered with gold thread, to the branches are attached by five wire springs several artificial flowers cut out of gold paper, and a long chain of gold paper pendants hangs from one of the branches.

[Pd. xii. 02].

Catalogue No. 1215. (Plate I. fig. 3, *a*).

Similar ornaments though differently named are worn by bridegrooms in the Malay Peninsula. "His head is adorned with the *sigar*, a peculiar head-dress of red cloth arranged turbanwise, with a peak on the right-hand side, from which artificial flowers (*gunjei*) depend, ... Besides this head-dress the bridegroom has a small bunch of artificial flowers (*sunting-sunting*) stuck behind each ear, whilst two similar bunches are stuck in the head-dress (one on the right and the other on the left)." (Malay Magic, by W. W. Skeat p. 379. Plate 12. Fig. 1).

2. Land Dyak—"sanggur mabok."

a. A tuft of aromatic leaves, "daun mabok" ('.*Acorus sp.*) bound on to a short wooden stick with a strip of red cloth. Sometimes worn in the head-dress by young men.

From Piching, Upper Sadong (Menggrat sub-tribe) [Pd. viij. 03].

Catalogue No. 1302.

Sea-Dyak women are fond of wearing flowers in their hair or head-dresses; men's caps are frequently decorated with the tail-feathers of hornbills or the quills of the argus pheasant. Ling-Roth figures (l. c. vol. II. p. 60) a remarkable conoidal cap, in the collection of the British Museum, carrying in the centre of the crown a plume 21 ins. high of small downy white feathers attached to slips of bamboo; a very similar cap, though unprovided with a plume, worn by the Land-Dyaks of Sambas, Dutch Borneo, has recently been presented to the Sarawak Museum by Mr. E. W. Byrde.

Ornaments worn in the ears.

I. Earrings of metal.
II. Ear-drops of metal or stone, or single beads.
III. Earrings of brass and brass-wire.
IV. Ear-pendants of brass and brass-wire.
V. Ear-pendants of bead-work.
VI. Ear-pendants of horn and bone.
VII. Ear-pegs.
VIII. Ear-studs and ear-plugs.

I. EARRINGS OF METAL.

Under the first heading are included the heavy metal rings or coils worn by both sexes of the Ukit, Maloh, Tanjong, Kanowit, Kenyah, Kyan and allied tribes and by Sea-Dyak men; the weight of metal worn by the women of the first mentioned tribes is so great that the lobe of the ear in course of time becomes an immensely elongated loop, through which sometimes the head can actually be passed. Pictures of women with these elongated ear-lobes may be found in most books written on Borneo. * The ear is bored when the subject is two or three years old, in the case of a boy the lobe of the ear is extended by heavy weights to about two or three inches in length, i. e. nearly to the shoulder, when a lighter earring is substituted and the elongation is carried no further; with girls the extension of the ear-lobe is carried still further and the heavy earrings are worn throughout the lifetime; occasionally the loop breaks under the strain and though it may be stitched up again, the unequal length of the two loops is always regarded as a great disfigurement. Amongst Kyans and Kenyahs the ear-lobes must first be extended with tin weights as it is supposed that brass weights applied to children's ears will cause the ears to become diseased and to break under the strain. Amongst such tribes as the Tanjong and Tring it is not unusual for the ear, in addition to the large perforation, to be bored in three other places, viz. at the top of the ear-couch and at the proximal end of each limb of the loop formed by the extension of the large perforation in the ear lobe; a finely beaded string is sometimes wound through one or more of the three smaller perforations. Carl Bock gives (Head-Hunters of Borneo p. 186) the following measurements of the ear of a Tring woman:—"Total length, 7·1 inches; length of slit, 4·75 inches; distance between level of chin and bottom of ear 2·85 inches." Sea-Dyak men do not have the ear lobe very much elongated, perhaps to no more than one inch; the fashion of these earrings has been borrowed by this imitative tribe from the Kyans and Kenyahs.

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* e.g. Ling Roth. l.c. vol. I. pp. 25, 27, 28, vol II. p. 67 (the women figured on pp. 25, 27, 28 are Tanjongs not Kanowits); Beccari, "Nelle Foreste in Borneo" p. 425; Nieuwenhuis, "In Centraal Borneo" Pl. XIII. Pl. LVI; several plates in Furness, "Home Life of Borneo Head-Hunters." Nieuwenhuis (l.c.pl. II) also figures a Bukit man with two ear-studs and very heavy earrings such as are usually worn by women only but the ear-lobes in this subject are not much elongated.

Carl Bock (l.c. p. 67) gives the following account of the manufacture of these ornaments:—"Taking a long, straight piece of bamboo, the hollow of which was the same diameter as it was intended that the earrings should be, he fixed on the top of it the half of a cocoanut shell with a hole bored through in which the upper end of the cane was inserted, the whole forming a tube with a cup at the top. Wrapping the tube in a cloth, he melted the tin in a small ladle and poured it into the cocoanut cup, till the tube was filled. When the tin was cool he opened the bamboo tube and took out a long straight round rod of tin, which he then bent round a thick but smooth piece of wood, forming a ring with the ends not quite meeting." Other methods which are noted below are employed for rather different types of earrings.

1. Tanjong. Kanowit, Maloh and Sea-Dyak earrings ("ariek" and "langgu").

A. Worn by men.

i. Tanjong.

a. "ariek semera," one pair of tin earrings; each is a cylindrical length of tin twisted into one turn of a spiral.

Diameter of earring, 3 cm.; thickness of tin, 1 cm.

Brooke Low collection.
Catalogue No. 113.

ii. Kanowit.

b. "ariek spenge," similar to above but made of copper and twisted into two turns of a spiral.

Diameter of earring 1·9 cm; thickness of copper 0·4 cm.
Brooke Low collection.
Catalogue No. 112.

c. "ariek semera," one pair of tin earrings; each is a flattened penannular ring; these have been made from a cylindrical piece of tin cast in a bamboo mould, bent into an incomplete circle and then ground flat. They are very light.

Diameter of earring 3·1 cm.; thickness of tin 0·4 cm.
Brooke Low collection.
Catalogue No. 109.

iii. Maloh.

d. A pair of tin earrings entirely similar to No. 113.
Diameter of earring 2·5 cm.; thickness 0·7 cm.
Brooke Low collection.
Catalogue No. 106.

iv. Sea-Dyak.

e. "langgu, "one pair of earrings similar to the preceding but made of lead.

Diameter of earring 3·2 cm.; thickness 0·4 cm.
Brooke Low collection. From the Lamanak River.
Catalogue No. 606.

f. "langgu bangkang," similar to Nos. 113, 106.
Diameter of earring 2·8 cm.; thickness of tin 0·6 cm.
Brooke Low collection. From the Sakarang River.
Catalogue No. 119.

g. "langgu temaga," a pair of earrings made from six pieces of stout brass wire coiled into a 6-ply and welded together, the whole twisted into one turn of a spiral.

Diameter of earring 2·6 cm.; thickness of brass-wire coil 0·7 cm.

Brooke Low collection. From the Saribas River
Catalogue No. 396. (Plate VIII fig. 14).

h. "langgu bangkang," a pair of penannular rings of cylindrical tin.

Diameter of earring 2·9 cm.; thickness of tin 0·5 cm.
Brooke Low collection. From the Sakarang River.
Catalogue No. 344.

Copper earrings of similar form to Nos. 113, 106 etc. known as "langgu tampang" are commonly worn by Sea-Dyaks.

B. Worn by women.

i. Kanowit.

a. "ariek spenge," twelve copper earrings; six are worn in each ear-lobe. Each earring is a cylindrical length of copper twisted into one turn of a spiral.

Diameter of earrings about 5·2 cm.; thickness of copper, about 0·6 cm.
Brooke Low collection.
Catalogue No. 111.

b. "ariek spenge," ten copper earrings, entirely similar to the preceding.

Brooke Low collection.
Catalogue No. 114. (Plate II. fig. 5, *e*, one example only).

c. "ariek pusong lasong," ten earrings similar to the preceding but made of brass.

Diameter of earrings about 3·5 cm.; thickness of brass 0·8 cm.
Brooke Low collection.
Catalogue No. 123.

d. "ariek geragum lasong," a pair of penannular rings of brass, very large and heavy, oval in section with a marked ridge on the outside. These have been cast in a clay mould.

Diameter of earring 5·8 cm.; thickness 1·8 cm. x 2·2 cm.; weight 10½ oz.
Brooke Low collection.
Catalogue No. 110. (Plate II. fig. 5, *b*).

ii. Tanjong.

e. "ariek lasong," a pair of large and heavy brass earrings, each is a cylindrical length of brass twisted up into one coil of a spiral.

Diameter of one ring 6·3 cm.; of another 6·1 cm.; thickness of brass 1·5 cm.; weight 8½ oz.

Brooke Low collection.

Catalogue No. 118. (Plate II. fig. 5, *a*).

f. "ariek semera," one pair of tin earrings similar to the preceding but made of tin.

Diameter of earring 4·3 cm.; thickness of tin 1·5 cm.; weight 5½ oz.

Brooke Low collection.

Catalogue No. 108. (Plate II. fig. 5, *d*).

2. Kyan—earrings (worn by men).

a. A pair of large but comparatively light earrings; each is in the form of a penannular ring of tin, circular in section. Diameter of earring 9·6 cm.; thickness of tin 0·8 cm.

Brooke Low collection. From the Long Gilat of the Mahakkam River.

Catalogue No. 115. (Plate II. fig. 5, *c*).

These large light earrings constitute a different type to the heavier twisted earrings described under heading 1. A very similar form is worn by the Milikin, a somewhat anomalous tribe living on the Gedong River, a tributary of the Sadong.

Ling-Roth (l. c. vol. II. p. 67) figures two ears, one with one earring like that described above suspended in the elongated ear-lobe, the other with two such earrings and an ear-peg; the legend under the figure is "Ears of Natives [? Dusuns] At Gunong Tabor or Panti River (E. Borneo) (After Mr. F. S. Marryat)." These are certainly not the ears of Dusuns, who do not wear ear-pegs or extend the ear-lobes, but of some Kyan or allied tribe. The Panti River it may be noted is not in a Dusun district.

On pp. 31 and 32 of vol. I. of his book on Borneo natives Ling Roth also figures after Lieut. F. S. Marryat some Saghais from S. E. Borneo with pendulous ear lobes in which hang large penannular earrings of (?)tin. The sketches are rather fanciful and I suspect that the Saghai are only a Kyan subtribe, comparable to the Long Wai, etc.

A. W. Nieuwenhuis in "In Centraal Borneo" figures (Pl. XCIII) a Long Gilat girl wearing earrings like No. 115 but quite twice their diameter; in the same work are also figured (Pl. LXII and Pl. LXXXVI) Kyan boys at Bloeöe with penannular earrings of this type. Carl Bock (l. c. Pl. 10) figures a Long Wahou man with similar earrings.

3. Bakatan and Sea-Dyak—ear-ornaments of tin (worn by men).

These ornaments are not rings, but they are nevertheless included under the heading I. as they are made from cylindrical lengths of tin cast in a bamboo mould; the tin is not bent into a ring nor into one turn of a spiral, but into a long loop, the ends of which are curled up to form small flat spirals, whilst other ornamentations may be added. A remarkable gold ornament found in August 1902 by gold-seekers in river gravel at Pankalan Ampat, Sarawak river, is figured on Plate III. fig. 6, *d*, for purposes of comparison. Whether this ornament is indeed an ear-pendant is not very certain, but it is singularly like the Bakatan ear-ornaments; it is possibly of Hindoo origin, and certainly not a product of indigenous handicraft.

i. Bakatan.

a. "urut" a pair of tin ear-ornaments, made from a cylindrical length of tin bent into an oval loop, the end of the loops rolled up outwards to form small flat spirals.

Length in a straight line 4·9 cm.

Brooke Low collection. Figured by Ling Roth (l. c. vol. II. p. 68).

Catalogue No. 124. (Plate III. fig. 6, *c*).

b. "urut," somewhat similar ornaments, but the tin has been ground flat, the loop is more elongated and the ends have been turned up outwards to form S-shaped figures.

Length in a straight line 6 cm.

Brooke Low collection.

Catalogue No. 345. (Plate III. fig. 6, *b*).

ii. Sea-Dyak.

c. "langgu bangkang," a pair of somewhat similar ornaments; the tin has been ground flat and bent into a loop narrower at the top than at the bottom, the ends of the loops have been twisted inwards to form flat hooks and inwardly projecting smaller hooks have been cut out from the inside of the loops.

Length in a straight line 7·1 cm.

Brooke Low collection. Figured by Ling Roth (l. c. vol. II. p 68).

Catalogue No. 120. (Plate III. fig 6, *a*).

This type of ornament has been borrowed by the Sea-Dyaks from the Bakatans; it is but rarely met with.

II. EAR-DROPS OF METAL OR STONE OR SINGLE BEADS.

Generally speaking these are peg-top shaped pendants of tin and brass with spiral suspensory hooks; one specimen (No. 116) is made of serpentine with a suspensory hook of deer's horn; those worn by women are of very considerable weight. The Long Gilat dragon ear-pendants are of quite a different type and are classified under a separate sub-heading.

1. Kanowit, Tanjong, Bakatan, Kyan, and Sea-Dyak ear-drops.

i. Kanowit.

a. "buah bitok lasong." a pair of brass ear-drops worn by women. Each is a large pointed ovoid (peg-top shaped) with a slender neck and spiral suspensory hook; the upper half of the ornament is "stepped."

Length 8·1 cm.; diameter 3·2 cm.; weight 7½ oz.

Brooke Low collection.

Catalogue No. 121. (Plate III. fig. 7, *a*).

b. "buah livong lasong," a pair of brass ear-drops worn by women. Very similar to the preceding, but smaller, the lower end less pointed, the neck very stout.

Length 7 cm.; diameter 2·3 cm.; weight 3¼ oz.

Brooke Low collection.

Catalogue No. 104. (Plate III. fig 7, *a*).

c. "buah belimbien," a pair of brass ear-drops worn by women. Each is a large hexahedron, with a knob at the lower end and a spiral suspensory hook; the neck is marked by a ridge which is incised with lines so as to simulate a circle of twisted fibre. The shape of the ear-ornaments is suggestive of the "belimbing" fruit (*Connaropsis monophylla*, Planch.), hence their name.

Length 10 cm.; diameter 3·2 cm.; weight 8½ oz.
Brooke Low collection.
Catalogue No. 125. (Plate III. fig 7, *b*).

ii. Tanjong.

d. "isang lasong," a pair of brass ear-drops worn by women. Each is a small ovoid, with eight flat faces, the lower end pointed, neck short, a spiral suspensory hook.

Length 6·3 cm.; diameter 2·4 cm.; weight 3 oz. 10 dr.
Brooke Low collection.
Catalogue No. 107. (Plate III. fig 7, *c*).

e. "buah livong semera," a pair of tin ear-drops worn by men. Each is a small pointed ovoid, a small knob at lower end, a slender neck and spiral suspensory hook.

Length 5·5 cm.; diameter 2 cm.; weight 1½ oz.
Brooke Low collection. Figured by Ling Roth (l. c. vol. II. p. 68).
Catalogue No. 117.

f. "lungin," * a pair of tin ear-drops worn by women. They are almost spherical, an ornamental knob at the lower end, neck ornamental with notches and a wedge pattern cut in relief, spiral suspensory hook.

Length 6·8 cm.; diameter 3 cm.; weight 4½ oz.
Brooke Low collection.
Catalogue No. 105.

iii. Bakatan.

g. "lungin," a pair of brass ear-drops worn by women. Peg-top shaped, upper part "stepped," neck very stout and short, spiral suspensory hook.

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* This is the Sea-Dyak name.

Length 7 cm. ; diameter 3·5 cm. ; weight 9 oz.
Brooke Low collection.
Catalogue No. 103. (Plate III. fig 7, *e*).

iv. Kyan.

h. "buah livong batu jela," a pair of large ear-drops of serpentine, worn by women. They are pointed ovoids, a large hole is bored into the top of each and into it is let a spiral suspensory hook cut out of deer's horn, and secured with a luting of dammar. The two hooks are not symmetrical, one being more coiled than the other.

Length 9 cm. and 9·5 cm. ; diameter 3·6 cm. weight 3 oz.
Brooke Low collection.
Catalogue No. 116. (Plate III. fig 7, *f*).

v. Sea-Dyak.

"langgu lungin," a pair of ear-drops worn by men. Each is a pale blue bead 1·3 cm. in diameter. Through the bead is passed a piece of lead that at one end is worked into an ornamental suspensory hook, at the other into a large stud.

[Pd. x. 04]. Catalogue No. 1458.

2. Kyan—ear pendants.

a. A pair of brass ear pendants worn by chiefs. They have been cast in the form of a dragon curved on itself in an S-shaped figure and are of unusual weight.

Weight 7¼ oz. From the Long Gilat, Mahakkam River.

Brooke Low collection. Figured by Ling Roth (l. c. vol. II p. 68).

Catalogue No. 122. (Plate III. fig 6, *e*).

A Sea-Dyak chief from the Rejang River suggested to me that these were not ear-ornaments but suspensory hooks for gongs, some Ukits however quite recently confirmed their use as ear-ornaments and I have no reason to doubt the accuracy of Brooke Low's original label.

III. EARRINGS OF BRASS WIRE.

These are series of penannular graduated rings of flattened brass wire worn round the margin of the ear conch by Sea-

Dyak men only amongst the Sarawak tribes. When the ornaments are discarded, as during a time of mourning, the perforations in the ear-cartilage are kept open with little plugs of wood. The fashion is not nearly so widespread as it was some years ago. The Dusuns of Mount Dulit [?—Dalit] * according to Witti (quoted by Ling Roth l. c. vol. II. p. 71) " have earrings which dangle one below another, all three of brass wire coiled into a spiral. The lowermost is fixed into the ear-lobe and is 2½ inches in diameter; the two smaller ones are fixed into the margin of the ear." This is the only reference that I can find to this type of ornament amongst the Dusuns and I have seen no specimens. The Muruts according to St. John " wear many rings of lead up the rim of the ear," and the Land-Dyaks of Sauh, Serambo and Singgi according to Denison wear earrings of " wire twisted round in a coil and hanging from the ear by single bend of the same," they are known as *shibu.*

1. Sea-Dyak—" grunjong."

There are three varieties of the "grunjong":—*A.* " grunjong tampil " or " grunjong ikat; " *B.* " grunjong buri; " *C.* " grunjong." The former are series of penannular rings, thirty to forty or fifty in number, strung closely together on a double thread; only a few holes are bored in the ear to hold these rings, in fact one hole at the top of the ear and one in the lobe is quite enough, the intervening rings of the series merely gripping the ear margin. The " grunjong buri " are separate penannular brass wire rings on which are strung ground-down cowry shells. From six to twenty can be worn on one ear; since the rings are not connected with each other, a separate hole in the ear-margin has to be bored for each ring. The Ulu Ai and Engkari Dyaks are said to be the only people who wear the " grunjong buri." The " grunjong " pure and simple are merely separate penannular rings of brass wire or tin worn like the "grunjong buri." Figures of Sea-Dyaks wearing " grunjong " are given by Ling Roth l.c. vol. I. pp. 3, 5, 11.

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* This cannot be the Mt. Dulit in the Baram District.

A. "grunjong tampil" or "grunjong ikat."

a. A pair of ear-ornaments; each one composed of a series of thirty-nine penannular rings of brass wire, filed flat on the inner side. They are graduated in size, the uppermost ring of each series being 2·1 cm. in diameter, the lowest 4·4 cm. The ends of the rings are turned back and through the loops so formed a double string is threaded; the rings are all threaded close together—being only separated from each other by knots in the string—so that each one overlaps the next below it.

Brooke Low collection. From the Lamanak River.
Catalogue No. 131.

b. Very similar to the preceding, but with only thirty-five rings, the smallest 1·8 cm. in diameter, the largest 5·1 cm. The last and largest ring is flat on both sides and to notches in its lower border are attached by small links of brass wire a row of twenty flat diamond-shaped brass pendants; the central pendant is bifurcated and to it is attached a double chain of diamond-shaped pendants. To every third ring of the series is attached by a sliding wire link a diamond-shaped pendant. The rings are not only joined together by a doubled string passing through the loops formed by the turned-back ends of the rings with a knot between each ring, but also by the string passing back outside the loops with a hitch round every ring.

Brooke Low collection. From the Sakarang River.
Catalogue No. 598. (Plate IV. fig. 8, *b*).

c. Very similar to the last, but with forty-three rings, the smallest 1·7 cm. in diameter, the largest 4·2 cm. Eleven flat diamond-shaped pendants of brass are attached by sliding links to the ring at irregular intervals; the last ring bears only one pendant not a row of pendants.

Brooke Low collection. From the Lamanak River.
Catalogue No. 599.

Ling Roth (l.c. vol. II. p. 65) figures a very similar pair of "grunjong" in the Edinburgh Museum.

B. "grunjong buri." (Ulu Ai or Engkari).

d. A pair of ear-ornaments; each ornament composed of a series of fifteen separate rings of flattered brass wire, graduated in size, the smallest being 2·3 cm. in diameter, the largest 5·4 cm. On to each ring is threaded a row of ground-down cowry shells and a small red bead at each end of the row is fastened by fine wire to the ring to prevent the shells from sliding about.

Brooke Low collection.
Catalogue No. 593. (Plate IV. fig. 8, *c*).

e. Similar, but only eleven rings, diameter of smallest 3·1 cm., of largest 5 cm. Two brass pendants on the last ring of the series.

Brooke Low collection.
Catalogue No. 594.

f. Similar, fourteen rings, diameter of smallest 2·1 cm., of largest 4·4 cm. A flat diamond-shaped brass pendant attached to each ring.

Brooke Low collection.
Catalogue No. 595.

g. Similar, twelve rings, diameter of smallest 2·2 cm., of largest 3·8 cm. No brass pendants.

Brooke Low collection.
Catalogue No. 596.

h. Similar, five rings, diameter of smallest 2·1 cm., of largest 4·3 cm. No brass pendants.

Brooke Low collection.
Catalogue No. 597.

IV. Ear Pendants of Brass and Brass Wire.

1. Land-Dyak—" anteng."

a. A pair of ear pendants worn by men in festal dances. Each is a thin disc of brass; a circular hole has been cut very excentrically in this disc, so that at one point only a narrow strip of brass is left; this has been split, leaving two overlapping strips which clip the ear-lobe. Several small holes are punched in the border of the disc and a fine silver-wire plait attached to these nearly encircles the disc, just stopping short of the ear-clips.

From the Menggrats of Piching, Upper Sadong River [Pd. viii. 03].

Catalogue No. 1306. (Plate II. fig. 5, *f*).

Small silver coins of the Netherlands India currency are frequently attached by silver wire chains to the plait encircling these discs. I was informed that the ornaments are almost obsolete now.

2. Sea-Dyak—" langgu tingga."

a. A pair of ear-pendants worn by men. Each consists of twelve graduated penannular rings of brass wire filed flat on the inside and of two broad flat penannular bands cut from a sheet of brass. The ends of all these are joined together by a thick luting of dammar; the smallest brass wire ring tops the series, the flat bands are terminal; all are further held together by two transverse brass wire clips. The front faces of the terminal brass bands are adorned with a simple wedge pattern, incised, known as "puchok rebong" *i.e.* shoots of bamboo; their lower borders are notched and to the teeth of the lower one are attached by brass wire links twenty-seven flat pointed pendants of brass, and to the central pendant of the row is attached a flat notched and bifurcated pendant from which hang two short chains of pointed pendants.

Length 9·5 cm.; diameter of lower flat band 7·4 cm.

Brooke Low collection. From the Sakarang River.

Catalogue No. 600 *a*.

This is worn clipped to the ear-lobe, but it is a full-dress ornament and not much affected except by young dandies; according to Brooke Low they are sometimes worn in addition to the "grunjong." There is a very good figure of a "langgu tingga" in Ling Roth's book (l.c. vol. II. p. 66).

3. Sea-Dyak " kenawieng."

a. A pair of ear-pendants worn by men. Each is a flat brass penannular band from which hang chains of flat pendants, but the two are not quite identical. The ends of the brass penannular bands are bound with cloth; one band is 5 cm. in diameter, twenty-one holes are punched in its rim and two circular lines are incised on its front face; to seven of the holes are attached by brass wire links single flat pendants of different shapes and three short strings of small pendants whose lower ends are connected to a flat cross-piece of brass; from five processes of this hang five strings of small flat pendants, two being short and three long; the central long one carries a cross-piece from five lower processes of which also hang five flat diamond-shaped pendants. The other ornament of the pair has the brass band only 4·1 cm. in diameter, and eleven holes punched in its rim, a slender chain replaces the central string of pendants described above.

Brooke Low collection. From the Sakarang River.
Catalogue No. 600. (Plate IV. fig. 8, *a*).

V. EAR-PENDANTS OF BEAD-WORK.

1. Kanowit—"tekulong."

a. A pair of ear-pendants worn by women (? in festal dances); each is a short strip of bead-work 5·1 cm. × 3·2 cm. with a bead-fringe; every strand of the fringe is terminated by a little piece of red-flannel (cf. Ling Roth l. c. vol. II. p. 73). The beads are small common European ones in several colours. I have no information as to the manner in which these pendants are attached to the ears.

Brooke Low collection.
Catalogue No. 413.

VI. EAR-PENDANTS OF HORN.

Kenyah men, chiefly of the sub-tribes Leppu Tau, Tepu, Leppu Aga, and Uma Lisan, wear an ear-pendant, such as that described below, in one ear, the other ear may carry a different sort of pendant or may be devoid of ornament altogether; the pendants are never worn in pairs.

1. Kenyah—"isang." *

a. A thin piece of buffalo horn, slightly curved and carved into the shape shewn in the figure, it is supposed to represent a prawn (*urang*). The pendant is suspended from an ear lobe by one of the hooks or else by a beaded loop of string. 5·0 cm. 4·5 cm.

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* *Isang* is ageneric term for ear-pendants.

From the Leppu Tau of the Batang Kyan River, Dutch Borneo.

R. S. Douglas, Esq. [P. 28. iii. 00].

Catalogue No. 1068 *a* (Plate III. fig. 6, *f*).

b. A similar but smaller specimen 4·5 cm. × 4·2 cm. From the same locality as the above.

R. S. Douglas Esq. [P. 28. iii. 00].

Catalogue No. 1068 *b*.

VII. EAR-PEGS.

Ear-pegs (*udang*) are worn by men of the Ukit, Punan, Kanowit, Tanjong, Skapan, Kenyah, Kyan and allied tribes; some Sea-Dyaks also have quite recently adopted the same ornament. The *udang* are either the canines of the clouded leopard, *Felis nebulosa* or imitations of these, carved from the casque of the solid-billed hornbill, *Rhinoplax vigil.* Amongst the Kyans and Kenyahs the leopard's teeth can only be worn by men who have taken heads and the pegs made from the hornbill casque only by chiefs. The pegs are thrust through large holes, punched with a sharpened section of bamboo, in the upper part of the ear-conch and are usually worn with the points directed downwards and slightly outwards; as a rule only one is worn in each ear, but Brooke Low (cf. Ling Roth l.c. vol. II. p. 69) states that the Uma Lesong wear two teeth in each ear, the upper one pointing upwards, the lower one downwards. Figures of natives wearing ear-pegs may be found in Ling Roth's book) vol. I. pp. 12, 14, 19, 23). When these ornaments are not in use* the lobes in the ears are filled with a plug of wood or a pledget of cloth or tobacco.

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* A Kenyah chief of the Baram River, Tama Bulan by name, when on a visit to Kuching some years ago, never wore his ear-pegs; when asked the reason, he replied that the evil spirits would recognise him by his ear-pegs and seeing him so far from his home would hasten there themselves and wreak their wicked will on all his people and belongings; without his ear-pegs he was practically disguised or at least unrecognisable.

1. Skapan—" udang."

a. One pair of canines of the clouded leopard, *Felis nebulosa.* The root of each tooth is transversely bored and a bead work tassel is usually attached in this position.
Length (in a straight line) 7·7 cm. and 7·6 cm.
Brooke Low collection.
Catalogue No 128. (Plate IV. fig. 9, *c*).

Ling Roth (l.c. vol. IV. p. 68) figures a pair of similar ornaments from Kapit, Rejang River; but each tooth is provided with a bead-work tassel and they are joined together by a beaded string, which, when the pegs are in position, passes round the back of the wearer's head; on the same page are also figured a pair of teeth pegs with gutta knobs in the collection of Dr. C. Hose. The tusk decorated with hair and cloth figured at the right-hand bottom corner of the same page with the legend " Ear peg (?) (Brooke Low collection)" is a sword-belt-toggle and not an ear ornament.

2. Punan—" udang tandok kleho."

a. One pair of ear-pegs made of buffalo horn and shaped to imitate a leopard's canines; the trenchant inner edge of the tooth and the distinction between the part of the tooth above the gum and the part below is imitated with remarkable fidelity. The " root " of each peg is transversely bored.
Length (in a straight line) 7·1 cm. and 6·9 cm.
Brooke Low collection.
Catalogue No 130.

3. Kyan—" udang betelu " (or " beto)."

a. One pair of ear-pegs worn by chiefs, carved from the casque of the hornbill *Rhinoplax vigil* and shaped to imitate the canines of the clouded leopard; the part of the ornament corresponding to the root of the tooth is expanded, flattened and fretted into a sort of spiral pattern.
Length (in a straight line) 9·1 cm.
Brooke Low collection. Figured by Ling Roth (l.c. vol. IV. p. 68).
Catalogue No. 129.

b. A very similar pair but the expanded head is rather differently shaped.

Length (in a straight line) 8·5 cm.

Brooke Low collection. Formerly the property of Laki Bato a distinguished chief in the Rejang River.

Catalogue No 605. (Plate IV. fig. 9, *b*).

4. Kenyah—" bula wai."

One pair of ear-pegs very similar to the two preceding examples. The " root " is carved into a pointed projection and a flat spiral with horns; they are of a beautiful crimson, the natural colour of the hornbill's casque; the colour has faded from the two Kyan pairs.

Length (in a straight line) 9 cm. and 8·7 cm.

Acquired by exchange from a Sea-Dyak ii. 02.

Catalogue No 1152. (Plate IV. fig 9, *a*).

VIII. Ear-plugs and Studs.

Ear-plugs are worn by Long Wai and Tring men, by Murut men and women, and by Brunei Malay, Sea-Dyak, Tanjong, Punan, and Milano women; they are worn in the distended ear-lobe. Ling Roth (l. c. vol. II. p. 69) figures a pair of handsome silver ear-studs known as *krebu* worn by Bakong women, the highly ornamental head of the stud can be screwed off the shank which is provided with a real thread of metal; there are no specimens of this type of ornament in the Sarawak Museum.

1. Murut—" oul buluh."

a. A pair of ear-plugs worn by men, in the lobe of the ear; each is a transverse section of bamboo 2 cm. in diameter, 1 cm. deep; a circular piece of looking glass is fitted into one end of the section.

From the Trusan River, near the coast.

Dr. G. D. Haviland coll.

Catalogue No. 745. (Plate VIII. fig. 4).

Somewhat similar ear-plugs are said to be worn by the men of some Land-Dyak sub-tribes.

2. Murut—"oul gading."

a. A pair of ear-plugs worn by richer men. Each is a thick disc of ivory with a broadly grooved rim; the front diameter of the disc is greater than the back diameter. Through the centre of the disc projects a wire; and on this is threaded a conical cornelian bead with flat sides, topped by a spherical red bead; the wire is secured at the back by being passed through four holes bored obliquely from the back of the ivory disc through to the rim; a thick brass wire loop is lashed with thin wire across the back of the disc, the ends of the loop projecting beyond the border of the disc, and being slightly turned up prevent the ornament from falling out of the ear-lobe.

Diam. 4·3 cm. depth 1·1 cm.
From the Bah country, Trusan River.
O. F. Ricketts, Esq. [P. 1889].
Catalogue No. 753. (Plate IV. fig. 9, *e*).

b. A similar pair but more carefully made; the spherical bead is of cornelian.

Diam. 4·2 cm.; depth 1·1. cm.
From Dalit in the Bah country, Trusan River.
Dr. G. D. Haviland coll.
Catalogue No. 744.

St. John (Ling Roth l. c. p. 70) states that both the men and women of the Adang Murut sub-tribe wear ear-plugs.

3. Tanjong—" orang."

a. A pair of wooden ear-plugs worn by women. Each is a thick disc of soft white wood, unornamented in any way. The diameter of the front face of each disc is 5·5 cm., of the back 5 cm.; the depth is 2·5 cm.

[Pd. x. 04].
Catalogue No. 1460.

b. Similar to the preceding but smaller and unequal in size. The front face of each is decorated with a star pattern painted in the wood with a black resin, on the back are painted two crossed lines with a dot in each of the four angles formed.
i. Diam. of front 4·5 cm.; of back 3·7 cm.; thickness 2·5 cm.
ii. „ „ „ 4·3 cm.; „ „ 3·5 cm.; „ 2·5 cm.

[Pd. x. 04].
Catalogue No. 1461.

Carl Bock (l. c. Pl. 16) figures a Punan women of the Kotei River wearing a pair of wooden ear-plugs very like the Tanjong specimens.

4. Brunei Malay and Kadyan—"subang."

i. Malay.

a. A pair of ear-plugs worn by women. Each is a cylindrical piece of soft wood expanded at one end to form an eight-pointed star in the centre of which several bits of glass are set; the whole is covered with gold paper.

Height 4·5 cm.; diam. 2 cm.
Mr. Steffen [P. 1892].
Catalogue No. 791. (Plate IV. fig. 9, *d*).

A somewhat similar pair of ornaments, but made of silver washed with gold is figured by Ling Roth (l. c. vol. II. p. 69); they are worn by Milanos. Upper-class Brunei women wear silver or even gold *subang*, but the lower-class women are sometimes content with a European cotton-reel with one end cut off and not ornamented in any way.

ii. Kadyan.

b. A pair of ebony ear-plugs worn by women formerly; almost cylindrical with expanded top; the top and bottom are carved with a geometrical pattern into which pieces of tinsel were let, but most of these have fallen out; the sides are decorated with an incised wedge pattern.

Height 2·1 cm.; diam. at top 2·2 cm. at bottom 1·6 cm.
A. B. Ward, Esq. [P. 30. iv. 04].
Catalogue No. 1415. (Plate VIII. fig. 3).

c. A pair of ebony ear-plugs very similar to the above, but smaller in diameter, and the decorative patterns different; the interstices of the patterns have been filled in with lime so that the black pattern stands out in relief against a white background.

Height 2 cm.; diam. at top 2 cm. at bottom 1·3 cm.
A. B. Ward, Esq. [P. 30. iv. 04].
Catalogue No. 1416. (Plate VIII. fig. 2).

These ornaments amongst the Kadyans are now entirely superseded by cheap jewelry of European or Chinese manufacture.

5. Sea-Dyak—" tensa pending."

a. tensa pinding temaga; a pair of leaden studs worn in the lobe of the ear by women; the head of the stud is a disc with its border deeply and narrowly notched, into the centre is let a small disc of brass; there is a short leaden shank and a small discoidal base.

Height 5 cm.; diam. of head of stud 4·1 cm.

Brooke Low collection. Figured by Ling Roth (l. c. vol. II. p. 68).

Catalogue No. 126. (Plate IV. fig. 9, *f*).

b. tensa pending engkraju; a pair of leaden studs similar to the preceding, except that a disc of copper is let into the centre of the head of the stud.

Height 5 cm.; diam of head of the stud 4·3 cm.

Brooke Low collection.

Catalogue No. 127.

Sea-Dyak women also wear studs like the *krebu* worn by Bakong women.

The Long Wai ear-plugs of gutta figured by Ling Roth (l. c. vol. II. p. 68) are probably worn by men in the top of the ear conch in place of the ear-pegs. I can pronounce no opinion on the ear lobe plug from Bejaju, S. E. Borneo, figured on the same page.

Ornaments worn on the neck.

I. Rattan, reed and seed necklets.
II. Teeth necklets.
III. Bead necklets.
IV. Brass-wire necklets.

I. RATTAN AND REED NECKLETS.

1. Dusun—" tagul."

a. Necklet of rattan worn by women; it is composed of two separate pieces of split rattan, round which are closely wound strips of very finely split rattan stained black; on the outside of one piece strips of finely split rattan, stained red, are interwoven between the vertical black strips forming a pattern of alternate wedges, on the outside of the other these interwoven strips are unstained. The necklet is fastened by a piece of wood at the end of a string buttoned into a string loop.

From Kiou, British N. Borneo.

Drs. G. D. and H. A. Haviland coll. [P. v. 92].

Catalogue No. 773.

Whitehead (l. c. Plate opposite p. 108. fig. XIII) figures a somewhat similar specimen.

Ling Roth (l.c. p. vol. II. p. 73.) figures a Sea-Dyak necklace of sections of reed strung on European thread, the ends joined by two loops of lead wire; the necklace is in the collection of Rev. F. W. Leggatt. Necklets of plaited vegetable fibre, like the armlets and leglets of the same material (*vide infra*) do not seem to be worn by any tribe.

Kalabit youths when visiting a strange country wear a necklet of seeds as a charm against sickness and evil spirits.

II. TEETH NECKLETS.

These are worn only by Land-Dyak men, at festivals and formerly when on the war-path or when visiting strange districts. The most valued specimens are composed entirely of the canines of *Felis nebulosa* strung on rattan. They are worth about or over $50; more commonly the canines of the honey-bear *Ursus malayanus* are employed with some small pig's tusks intermixed, but even these are very expensive. The Sarawak Museum specimen *a*, described below, is the only one of its kind known to me. The necklets are known as *bobot* and are worn with the points of the teeth directed upwards (cf. Beccari, Nelle Foreste in Borneo, Figs. 24 and 27).

1 .Land-Dyak—"bobot."

a. Forty silver imitation teeth and six canine teeth of a small carnivore (*? Felis bengalensis*) strung on a double rattan thread; the silver "teeth" are hollow and filled with dammar, they are shaped like the canines of *Felis nebulosa*, the largest ones (6 cm. in length) are in the middle and decrease in size towards the ends; at the ends are situated the six small canine teeth. Between each "tooth" occurs a dark blue glass bead, cylindrical in shape and about 7 mm. in diameter, they are strung on one of the threads traversing the "teeth" and serve to keep them at equal distances apart. In order to conceal the threading of the "teeth" and beads, a plaited band of split rattan is laid over the bases of the "teeth" in front of the necklet and three strips of split rattan serve the same purpose at the back; attached by wire to the plaited band is a row of small oval pieces of silver. The whole necklet is bent into an oval and is fastened by ordinary string.

From Selakau near Lundu, Sarawak. [Pd. v. 02).

Catalogue No. 1156. (Plate II. fig. 4, *a*).

b. Necklet of sixty-nine teeth strung on a double rattan thread; sixteen of the teeth are human molars, premolars and incisors, the remainder are the canines of the honey-bear, with one or two very small pig's tusks intermixed. The teeth are all strung close together and to keep all taut the double rattan thread is lashed by a long coil of split rattan to a strip of split rattan laid over the bases of the teeth. To conceal the threading of the teeth a strip of brass is laid over the bases of the teeth on the opposite side to the split rattan strip and is secured with lashings of wire and split rattan. The whole necklet is bent into a circle of 20·7 cm. diameter.

From Krokong, Upper Sarawak.

Catalogue No. 1445. E. W. Byrde Esq. [P. viii. 04].

References to similar necklets will be found in Ling Roth's work (l.c. vol. II. p. 73).

These necklets are considered of such value that the owners are prepared to offer them in exchange for their lives if threatened by either supernatural or human enemies. The beads which are interspersed with the canines often have powerful magical properties.

III. Bead Necklets.

Bead necklets are worn by both sexes of every tribe.

The beads from which the necklets and girdles in the Sarawak Museum are made may be grouped under eleven headings, and in order to avoid much circumlocution and repetition in the descriptions of the necklets and girdles given below, the component beads will be referred to, as a rule, merely by their respective group numbers :—

Native-made beads.

Type 1. Quartz crystals, bored.*

Type 2. Cornelian and agate pebbles, ground and bored.*

Type 3. Columellæ of shells and shell discs.

Type 4. Brass wire wound into the shape of a long bead.†

Imported beads.

Type 5. Small glass and glazed clay beads of different colours, ranging in size from 2 mm. in diameter to 4 mm.; of quite modern European manufacture and importation.

Type 6. Large glass beads of different colours, generally spherical but sometimes with flat faces, sometimes cylindrical. Some of these are antique.

Type 7. Modern glass beads of Venetian make, ovoid in shape, of different colours with crude designs in other colours roughly painted over them. About 5 mm. in diam.

Type 8. Small discoid glazed clay beads, yellow or pale blue in colour, known as *labang*. Antique specimens are valued at $1 apiece. About 4·8 mm. in diam. Supposed to be of Venetian origin.

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* Some of these beads are bored locally by the pump-drill.

† Made by the Malohs (cf. Ling Roth l.c. Vol. II. p. 73); there are no specimens in the Sarawak Museum.

Type 9. Spherical glazed clay beads of different colours, ranging in size from 6 mm. in diam. to 13 mm. Some specimens are antique and are very highly valued. They * are supposed to be of Venetian origin.

Type 10. Cylindrical Venetian beads of glazed clay or glass, generally black or dark blue in colour, with four rosettes painted in different colours though generally in red and yellow on them. (Plate VIII. fig. 5). Some specimens are striped longitudinally, others have sinuous lines on them. The generic term for these beads is *lukut*, but almost every specimen has a distinctive name, such as *mata tiong* (mynah's eye), *lukut puni* (pigeon bead), *lukut telingan* (hornbill bead), *lukut kelum bla* (striped bead). Antique specimens have high values placed on them, $10 is quite a usual price. The usual size is 15 mm. in length by 5 mm. in diam.

Type 11. Similar to the above but much larger and generally spherical. Diam. about 20 mm. Antique specimens are valued very highly; one form known as *lukut sekala* is worth as much as $100 amongst the Kyans.

(Plate VIII. figs. 6, 7, 8, 9).

The owners of antique beads of Types 9, 10, 11 consider them to be of vast antiquity, and, in many cases, of supernatural origin; they have been handed down from one generation to another so that the date of their importation is now buried in some obscurity. Tribes other than the Kyans do not attach so much value or importance to these antique beads, and any in the possession of Sea-Dyaks have probably been looted from Kyans. Kyans have definite names and definite values for every form of antique bead, and they form part of their currency.

Antique examples of Type 10 are better finished and have a larger bore than modern imitations and the Kyans are wonderfully acute in distinguishing between the two.

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*Weathered specimens exhibit a spiral structure; apparently the clay when wet was twisted in short lengths round a rod, then shaped roughly into the form of a bead and baked; the final polishing and shaping taking place after the clay was fired.

1. Murut—" bani."

a. Necklet worn by women; it is composed of nine cornelian pebbles roughly ground into flat ovals and of twenty-nine beads of Type 9, yellow, red, (*dara brak*, pig's blood), pale blue (*bunan*) and black with coloured spots. All are threaded on a double thread, the cornelian pebbles are perforated longitudinally by two holes through which the two strings pass. The diameter of the beads ranges from 13 mm. to 9 mm.

From the Trusan district. [Pd. 2. xii. 02].

Catalogue No. 1195. (Plate II. fig. 4, *b*).

Ling Roth (l.c. Vol. I. p. 213) figures a portion of an Undup (Sea-Dyak) cornelian and bead necklace.

2. Land-Dyak—" pangia."

These are necklets worn by the married women and female witch-doctors (*borich*) of Upper Sarawak. Charms, that are supposed to be effective in healing disease, in inducing good harvests, etc., are always attached to the necklets. They are worn by married women at festivals, for three months following childbirth, except during the first week, and for three months after the death of a husband; by the *borich* they are worn almost constantly, invariably at festivals and magic ceremonies. (For an account of the Land-Dyak witch-doctors cf. Ling Roth Vol. I. p. 259 et. seq). About 50% of the women in the village of Krokong, Upper Sarawak, are *borich.*

a. Necklet consisting of eight rows of differently coloured beads (*likich*) of Type 5, 3 to 4 mm. in diameter, strung on finely split rattan threads; the rows are bound together side by side by ten transverse loopings of brass wire so as to form a flat band of concentric rows; the free ends of the rattan strings are made fast to a row of five Chinese *cash* bound together by string (*toli*), these lie flat on the back of the neck of the wearer. The differently coloured beads are arranged in thirteen definite transverse divisions; starting from one end the arrangement of colours is:—blue and black mixed (*songot*), yellow (*siah*), red (*biliah*), opaque white (*morpu*), blue and black mixed, opaque white, transparent white (*tagi*), with a few green and red beads at each end of the division, opaque white, blue and black mixed, opaque white, red, yellow, blue and black mixed. The outermost *row* however is made up of rather different beads with flat faces, pink, white and pale green in colours, and they are not arranged in any definite order. The brass wire loopings mark the junctions of all the divisions except the junction between the blue, black and yellow divisions. The arrangement and number of colours is said to vary with every village, and the number of bead rows varies from five to ten. From the band of Chinese cash depends a string loop on which are strung some charms; these are as follows :—

1. An incisor of a porcupine (*bidiak*).
2. A canine of a wild cat.
3. A claw of the scaly manis (*oomb*).
4. A claw of the Brahminy kite (*libau*).
5. A ring of coconut shell (*boru butan).*
6. Five small brass rattles of European make (*boman*).
7. Three cast brass rattles (*prosi*).
8. Two quartz crystals enclosed in brass wire lashings (*penoah*).
9. Several differently coloured beads of Types 5 and 6 (*likich*).

The only information that I have about these charms is, that if the quartz crystals are dipped in water and the water allowed to drip from them on to a poisoned wound such as is caused by a venomous snake, scorpion or centipede, the wound becomes cold and the poison eventually will depart from it. Doubtless each one of the charms has specific properties; they are always suspended from the necklet. Circumference of necklet 69 cm., width 2·8 cm.

From Krokong, Upper Sarawak.

E. W. Byrde, Esq. [P. 8. ii. 04].

Catalogue No. 1402. (Plate II. fig. 4, *c*).

Mr. E. W. Byrde, to whom I am indebted for most of the information given above, has in his own collection a less elaborated example of the "pangia," but these two are the only specimens that I have ever seen. At the village of Lanchang, Upper Sadong, all the guests at a feast given in my honour by one of the head-men of the village were sprinkled with water from a basin, the sprinkler being a necklace of a different nature to the "pangia;" owing to the supposed magical properties of this necklace I was unable to buy it and I was not allowed to examine it very closely.

3. Sea-Dyak—"kong-kong rekong."

Bead-necklets worn by adults and children of both sexes.

a. Necklet composed of a single string of beads of Type 5. about 3 mm. in diameter, red, yellow, black and white in colour. A few small cast brass rattles are attached to the necklet at one point. The necklet forms a complete loop without a fastening.

Brooke Low collection.

Catalogue No. 414.

According to a note by Brooke Low necklets of this character are given by young men to girls as a token of betrothal, but a Sea-Dyak chief from the Rejang River who recently visited the Sarawak Museum ridiculed this statement; however, amongst the Kyans a girl will give a bead necklet to a man to whom she considers herself betrothed so that it is quite probable that Brooke Low's statement is correct.

b. necklet composed of a single string of beads of Type 9 about 6 mm. in diameter; the majority are pale blue in colour, * but a few are white and white and black; all are much weathered. In addition to these beads there are three quartz crystal beads with ground faces, seven cornelian beads (Kyan name *akit*) of varying shapes and sizes and one bead of Type 10 white in colour with some pale yellow zigzag lines, known to Kyans as *bahu tulang* and valued at about $5.

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* The pale blue beads are much affected by Kalabits and Muruts and are known to the former as *bahu bata*, they are worth about 50 cents apiece.

Brooke Low collection.

Catalogue No. 148.

c. Necklet worn by men composed of four strings of very small beads of Type 5 about 2 mm. in diameter; the majority of beads are dark blue but there are a few red, yellow, black and white ones at the ends of the strings; the four strings of small beads pass at each end into a short single string of yellow beads of Type 8, 4 mm. in diameter and to these are attached tassels of the canines and incisors of the gibbon (*Hylobates*); the necklet is fastened by a pearl shirt-button and a beaded string loop. Length 54 cm.

Catalogue No. 601 *a*. From the Rejang River.

d. Necklet composed of sixteen strings of beads of Type 5 about 2 mm. in diameter, the majority of beads are black but a few beads at the ends of the strings are yellow, red, white and blue. The sixteen strings of small beads pass at each end into a short single string of yellow beads of Type 8, 7 mm. in diameter. Four tassels of differently coloured beads of Type 5 complete the necklet; it is fastened with a knot of string and a string loop.

Length 47·5 cm. From the Rejang River.

Catalogue No. 601 *b*.

e. Necklet composed of nine cylindrical red beads of Type 6, 12 mm. in length and 5 mm. in diameter, alternating with three short lengths of beads of Type 5, blue, yellow, white and red, 3 mm. in diameter; at the ends four yellow beads of Type 8, 4 mm. in diameter, and two pearl shirt buttons one of which is buttoned into a string loop.

Length 46 cm. From the Rejang River.

Catalogue No. 601 *c*.

f. Necklet composed of beads of Type 7, 5 mm. in diameter, blue with rough designs (circles and lines) painted on in yellow and red; at the ends one or two yellow beads of Type 8, 4 mm. in diameter alternating with cylindrical red beads of Type 6, and a tassel of variously coloured beads of Type 5 about 2 mm. in diameter strung on wire; a few bat's teeth are attached to the tassels.

Length 57 cm. From the Rejang River.

Catalogue No. 601, *d*.

g. Necklet composed of thirteen beads of Type 10 (two sorts, see Plate VIII. fig. 5), these are in the centre, succeeding them two cylindrical red beads of Type 6, a length of pale blue beads of Type 8, 7 mm. in diameter and a length of yellow beads of Type 8, 6 mm. in diameter. At each end a tassel of small beads of Type 5 variously coloured, about 2 mm. in diameter. The necklet is fastened with a string loop and a brass button. The *lukuts* (beads of Type 10) are not antique.

Length 53 cm. From the Rejang River.

Catalogue No. 601, *e*.

4. Kyan and Sea-Dyak bead-work necklets.

i. Kyan.

a. The basis of the necklet is a roll of red cloth, this is covered with bead-work, the beads being of Type 5, about 2 mm. in diameter, white, black, yellow, blue and red; they are arranged in that order to form zigzag lines. Tassels of the same kind of beads red, black and white in colour and strung on fine wire, are attached to the ends of the necklet by a short length of six beads, of Type 8 pale blue and yellow in colour, with one bead of Type 9 included in each length. Fastened with one brass wire hook. Worn by men.

Length 59 cm. Hon. C. A. Bampfylde [P].

Catalogue No. 901. (Plate II. fig. 3, *d*).

A very similar specimen worn by Sea-Dyaks (Leggatt Coll.) is figured by Ling Roth (l. c. Vol. II. p. 72).

ii. Sea-Dyak.

b. "kong-kong rekong," a strip of bead-work 37·5 cm. long and 1·6 cm. broad, fastened with a pearl shirt-button and beaded thread loop. The beads are of Type 5, about 2 mm. in diameter and variously coloured, they are arranged to form a geometrical pattern in five divisions; each element of the pattern is known as *Katak* (frog).

From the Saribas River. Kalong [P. 10. xi. 92].

Catalogue No. 793. (Plate II. fig. 3, *c*).

IV. BRASS WIRE NECKLETS.

There are no specimens of such in the Sarawak Museum Ling Roth (l. c. Vol. II. p. 76) quotes Spencer St. John " The girls [Muruts] twist about a couple of fathoms of brass wire in circles round their neck, rising from the shoulders to the chin, forming what appears a stiff collar with a very broad base ...... ". This refers to Muruts of the Limbang river head-waters. The Dusuns of Toadilah and the Tinagas Dusuns according to Hatton and Witti also wear brass wire necklets.

Ornaments worn on the arms and legs.

I. Armlets and leglets of plaited fibre, rattan, etc.
II. Armlets of wood.
III. Armlets of ivory, of horn, of shell, of porcelain.
IV. Armlets and leglets of rattan and brass annuli.
V. Armlets and leglets of brass wire.
VI. Bracelets and anklets of brass, of copper and of silver.

I. ARMLETS AND LEGLETS OF PLAITED FIBRE, RATTAN, ETC.

1. " unus."

These are rings of finely plaited fibre worn by men in considerable numbers on the arms below the elbow and on the legs below the knee; the fibre is collected from the base of the sheathing leaves of the *apeng* palm (*Arenga sp.*) or of the *ijok* palm (*Arenga saccharifera*) and sometimes the sclerenchymatons fibres in the stem of the common bracken (*Pteris aquilina*) are employed. As many as three hundred of these leglets may be worn on one leg. The rings have a fixed value and at one time were employed as currency. All the tribes of Borneo seem to affect these simple ornaments (cf. Ling Roth l. c. Vol. I. pp. 5, 11, 14, 15, 23), and they are found in many other parts of the world also e. g. in the Shan States, in the Torres Straits etc. *

i. Sea-Dyak.

a. Forty-six rings of plaited palm fibre, about 7 cm. in diameter.

From the Lamanak River.

Brooke Low collection.

Catalogue No. 611.

ii. Sihan.

b Two hundred and four rings of plaited palm fibre, in two bundles, about 11 cm. in diameter.

Brooke Low collection.

Catalogue No. 141.

2. Sea-Dyak—"tenklai lengan."

a. Bracelet of two loosely plaited lengths of a jungle creeper known as *akar ensunat*; worn by boys.

Diameter 7 cm.

Brooke Low collection. Figured by Ling Roth (l. c. Vol. II. p. 75).

Catalogue No. 138.

b. Bracelet, worn by boys, made from a stout piece of split rattan, one end is produced to form a long narrow strip which is passed through a hole in the other end and wound tightly round so as to bring the two ends together and overlapping.

Diam. 7·5 cm.

Brooke Low collection.

Catalogue No. 136 *a.*

c. Similar specimen, but the outside of the bracelet is decorated with a rough pattern burnt on it with a red-hot wire.

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* The Kyaus say that they feel quite naked if they do not wear *unus.*

Diam. 8·1 cm.

Brooke Low collection.

Catalogue No. 136 *b*. (Plate VIII. fig. 12).

d. Similar specimen, but the poker-work design is more carefully executed; one end of the rattan is produced to form a short strip with a knob at the end and this is buttoned through a hole in the other end.

Diam. 7·7 cm.

Brooke Low collection.

Catalogue No. 136 *c*.

3. Kenyah bracelets of rattan work.

a. twelve bracelets worn by men (?). Eleven are cylindrical pieces of rattan with strips of finely split rattan dyed black closely wound round; round the outside runs a strip of yellow rush interlaced with the rattan strips. One bracelet is broader than the others, made from a flat strip of rattan closely wound with finely split rattan strips and three strands of rush interlaced on the outside.

Diam. about 6 cm.

From the Uma Kelap.

Brooke Low collection.

Catalogue No. 399 *b*.

II. ARMLETS OF WOOD.

These are made of wood cut from the buttress of a large jungle tree; the wood is known as *tapang* (*Abauria excelsa*); the Sea-Dyak wooden armlets are decorated with inlaid pieces of tin. The armlets are worn above the elbow and by men only.

1. Land-Dyak, Kyan and Kenyah wooden armlets.

i. Land-Dyak—"enkli."

a. Wooden armlet, the outside bevelled and with a groove running round it.

Diam. 8 cm.; depth 1·3 cm.; thickness 2·7 cm.

From the Menggrat of Piching, Upper Sadong River [Pd. viii. 03].

Catalogue No. 1305.

ii. Kyan.

b. Wooden armlet, the outside bevelled.

Diam. 9·6 cm.; depth 1·5 cm.; thickness 1·1 cm.

Brooke Low collection.

Catalogue No. 603.

iii. Kenyah—"selang."

c. Wooden armlet, the outside not bevelled, with a groove running round it.

Diam. 8·8 cm; depth 1·4 cm.; thickness, 0·7 cm.

From the Leppu Tau of the Batang Kyan, Dutch Borneo. R. S. Douglas Esq. [P. 26. iii. 03].

Catalogue No. 1067.

2. Sea-Dyak—"simpai tapang."

Wooden armlets so shaped as to be almost triangular in transverse section, the base of the triangle being inside and next the arm the apex outside, or in other words the wood is carved down to form a sharp pointed median ridge all round the armlet on the outside. Pieces of sheet tin cut into small triangles, ovals and crescents are let in to the wood and are so arranged as to form simple patterns, such as two rows of triangles their apices directed towards each other and towards the median ridge, with ovals on the ridge itself alternating with them. (Plate V. fig. 10, *a*).

a. A row of ovals only on the median ridge.

Diameter 11·1 cm.; depth 2·5 cm.; thickness 1·6 cm.

b. A double row of triangles their apices directed towards the median ridge, with a double row of crescents alternating with them and brass studs on the median ridge.

Diameter 9·4 cm.; depth 2·8 cm.; thickness 0·9 cm.

c. Very similar, but the triangles distorted into irregular triangular figures, eight ovals let into the median ridge and so deeply countersunk that the armlet is nearly octagonal in outline.

Diameter 10·1 cm.; depth 1·7 cm.; thickness 1·1 cm.

d. Very similar to the above but all the figures very irregular in shape.

Diameter 10·3 cm.; depth 1.8 cm.; thickness 1·1 cm.

e. A double row of triangles and twelve ovals on the median ridge.

Diameter 9·9 cm.; depth 1·4 cm.; thickness 1·2 cm.

f. Similar but with tin studs arranged in threes alternating with the triangles. (Figured by Ling Roth l. c. Vol. II. p. 74).

Diameter 9·6 cm.; depth 1·4 cm.; thickness 1·1 cm.

g. Similar but the tin studs arranged in fives.

Diameter 9·4 cm.; depth 1·3 cm.; thickness 1·2 cm.

h. Similar to *b* but with no brass studs on the median ridge.

Diameter 8·9 cm.; depth 2·3 cm.; thickness 1·2 cm.

Brooke Low collection.

Catalogue No. 135.

Ling Roth figures (l. c. Vol. II. p. 74) two other *simpai tapang*, one has been cut to receive the pieces of tin but these have either been lost or were never inlaid; the other, worn by boys is said to be inlaid with tin foil, the pattern formed is rather different from any described above:—a double row of triangles with their apices notched and a row of diamond-shaped figures on the median ridge alternating with these.

III. ARMLETS OF IVORY, OF HORN, OF SHELL, OF PORCELAIN

1. Kyan—ivory armlets (Sea-Dyak name "tumpa bala").

a. ivory armlet worn by a chief; the outside is fluted with broad oblique grooves which in one place become wary; at two points opposite to each other is a carving in relief representing possibly a dragon (*udoh asu*), the common Kyan design. (Plate VIII. fig. 13. *a*, *b*).

Diam. 8·5 cm.; depth 1·5 cm.
Brooke Low collection.
Catalogue No. 602. (Plate V. fig. 10, *c*).

b. Ivory armlet worn by a chief; quite plain and unornamented.

Diam. 9 cm.; depth 1·5 cm.
Brooke Low collection.
Catalogue No. 140.

2. Kyan—"takieng," armlet made from the casque of the hornbill, *Rhinoplax vigil.*

a. A long narrow strip has been cut from the hornbill's casque, bent into a ring and the ends joined most skilfully, the outside is bevelled. The armlet is of beautiful rose and amber colours and is semi-translucent; I have no information as to the exact way in which the rather intractable material is worked into its present shape.

Diam. 7·6 cm.; depth 1·1 cm.
[Pd].
Catalogue No. 1018.

3. Sea-Dyak—"tuchong simpai," shell armlets.

a. Armlet formed by grinding down so as to form a broad ring a large cone-shell (*Conus guratensis*) known as *kima*; the space between the outer wall of the shell and the first turn of the spiral is filled up with dammar in which are embedded small ground-down cowries; the outside is fluted with shallow grooves. Worn above the elbow by men.

Diam. 11·1 cm.; depth 6 cm.
Brooke Low collection.
Catalogue No. 142 *a*. (Plate V. fig. 11, *a*).

b. Similar but smaller.
Diam. 10 cm.; depth 5 cm.

Brooke Low collection.

Catalogue No. 142 *b*.

Both the above specimens are figured by Ling Roth (l. c. Vol. II. p. 74).

The scarlet *saga* (*Adenanthera pavonina*) seeds frequently replace the ground cowries of the specimens described above.

Somewhat similar shell armlets known as *rangke* are worn by Sea-Dyak women, on high-days and holidays but they are smaller and less carefully finished, eight to twelve are worn on each arm. Ling Roth (l. c. Vol. I. p. 20). Figures a Sea-Dyak (wrongly labelled Kanowit) girl wearing these ornaments.

The Land-Dyak women of the Upper Sadong and Upper Sarawak (left-hand branch) rivers wear shell armlets, (*rapak*) alternating with coils of brass wire; the fashionable number is four to each arm, one round the biceps, one just above the elbow, one round the middle of the fore-arm and one round the wrist; these armlets are purchased from Chinese traders for about $5 apiece, they are always quite plain and about 4 cm. in depth; armlets of porcelain are sometimes substituted for the shell armlets, a specimen in the Canterbury Museum is figured by Ling Roth (l. c.Vol. II. p. 74)

Quite a recent importation are the series of slender rings of celluloid worn on the fore-arm by Sea-Dyak men; the armlets are made in Europe and cost about $10 a set; the rings are threaded together by string. Similar armlets but made of ivory are worn by Kenyah women.

IV. Armlets and Leglets of Rattan and Brass Annuli.

These ornaments, known as "engkrimu" are worn by Sea-Dyak men only and according to Brooke Low chiefly by the Sakarang and Lamanak sub-tribes.

1. Sea-Dyak—"engkrimu."

a. A set of leglets worn by men; the set consists of four series of graduated rings of split rattan strands on to which are threaded numerous small brass annuli; one series consists of eleven rings, one of thirteen rings and two of twelve rings; the rings of each series are kept together by three brass wires which transfix each ring; the front of every ring is marked by three annuli of rattan stained black, with three annuli stained red on each side, two brass annuli intervening, when all the rings are in position on the leg the effect is produced of a slender black line running down the middle of the front of the series with a red line on each side; two series of rings are worn on each leg, the upper series is worn with the largest ring at the bottom, the lower series with the largest ring at the top, so that the two together fit over the bulge of the calf.

Diam. of largest ring 11·5 cm.; of smallest 9·1 cm.

Brooke Low collection.

Catalogue No. 134. (Plate V. fig. 11, *d*).

b. Seven rings of split rattan strands bound together by a wrapping of a narrow strip of rattan cuticle stained red with dragon's blood and a strip stained black with indigo; several brass annuli are threaded on each ring. Worn on the arms.

Diam. of largest ring 9·6 cm.; of smallest 7·1 cm.

Brooke Low collection.

Catalogue No. 139.

V. Armlets and Leglets of Brass Wire.

These are coils of brass wire and sets of brass wire rings. The Sea-Dyak term for both varieties is *sĕlong*, though as a rule it is applied only to leglets, whilst the terms for armlets are *tumpa selong* or *tumpa belit* and *tumpa gurang*, the former being applied to the wire coils, the latter to the sets of separate rings. Sea-Dyaks assert that the separate wire rings are of a comparatively modern date having been introduced amongst them by the Malohs of Kapuas. Women wear both brass coils and separate brass rings on the arms and legs, but men wear neither on the legs and rarely wear brass coils on the arms. The ornaments are not in every day use but are only assumed on high-days, holidays or other special occasions. A figure of a Sea-Dyak girl with her legs covered from the knees to the ankles with a graduated brass wire coil is given by Ling Roth (l. c. Vol. I. p. 21); the men do not wear brass wire leg-ornaments to such an extent, but cover the arms with brass wire separate rings. The Land-Dyak women of the Upper Sadong and Upper Sarawak (left-hand branch) rivers always wear a coil of brass wire (*surin*) on the legs from below the knee to just above the ankle, the coils are wound very tightly round the leg and in course of time considerable distortion of the calf of the leg is produced ; even small girls of 7 or 8 years of age are burdened with quite a considerable weight of metal. Coils of brass wire alternating with shell armlets (cf. p.) are worn on the arms from below the shoulder to the wrist. Land-Dyak men of the Sauh, Serambo and Singgi districts wear armlets of brass wire coils at festivals. Dusun women wear a coil of brass wire round the wrists and round the ankles, also separate rings.

1. Dusun—armlet.

a. Ring of brass wire worn as a bracelet by women.

Diam. 6·7 cm.

R. Shelford [P. 28. ix. 03].

Catalogue No. 1336.

2. Sea-Dyak—“tumpa gurang.”

a. Four sets of brass wire rings, sixty to a set, worn as armlets by men ; the rings have been arranged in graduated sizes on rolls of bark cloth ; nearly all are penannular and a few in each set have been incised on the outside with lines and circles.* The smallest rings are worn just above the elbow, the largest on the wrist and upper arm.

Average diam. of largest rings 7 cm. ; of smallest 5 cm.

Brooke Low collection.

Catalogue No. 133. (Plate V. fig. 11, *c*).

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*According to Brooke Low these incised rings are known as *tenklai* but *gurang kinkieng* is probably their correct name (vide infra).

b. Three penannular rings of brass wire worn as armlets by men; two have simple geometrical patterning incised on their outer border, one is twisted.

Diam. 6·7 cm.; 7·1 cm; 7 cm. (twisted specimen).

Brooke Low collection.

Catalogue No. 604.

A Rejang Sea-Dyak informed me that *tumpa glos* was the name for these ornaments in his district; in the Batang Lupar River *glos* is equivalent to the Malay *galang*, or bracelet, and the term is applied to the silver bracelets worn by Balau and Sebuyau women.

3. Sea-Dyak—"tumpa sĕlong."

Two coils of brass wire worn as armlets by women; the wire of one coil at one end is notched on the outside (*kinkieng*).

Brooke Low collection.

Catalogue No. 132.

In Brooke Low's catalogue these are entered as *gurangor tumpa selong*; *gurangor*, means unfinished bracelets, leglets or armlets.

4. Sea-Dyak—"sĕlong."

a. Six penannular rings of brass wire worn round the ankles by women; two are quite plain, four are notched or punched on the outside. According to Brooke Low these anklets are "given to those called on to feed the gods on feast-days," but a Sea-Dyak chief from the Rejang River scouted this statement; the same informant gave as the name of these ornaments *sĕlong kinkieng*.*

Diam. 11·4 cm. to 9·2 cm.

Brooke Low collection.

Catalogue No. 137.

**Kinkieng* means notches, the term applies to the rings with the outside notched and punched.

b. Two long coils of brass wire worn as leglets by women.

Brooke Low collection.

Catalogue No. 1421. (Plate V. fig. 11, *b*).

c. One coil of brass wire worn as a leglet by women. This is one of a pair of coils.

Catalogue No. 948.

VI. Bracelets and Anklets of Brass, Copper and Silver.

1. Sea-Dyak—"tumpa sidieng."

a. A pair of brass bracelets worn by women; each is a broad penannular band incised on the outer surface with a simple geometrical design known as *puchok rebong*, i.e. bamboo shoots. From the Engkari sub-tribe.

Breadth 4·8 cm.; diam. 5·8 cm.

Brooke Low collection.

Catalogue No. 395. (Plate V. fig. 10, *d*).

2. Sea-Dyak—"gerang giring."

a. Two pairs of brass anklets worn by women. Each anklet is a tube of thick brass bent into a penannular ring; the tube is somewhat elliptical in section; the outer border of the tube is split by a broad slit which runs almost from one end to the other, the ends however are for a short distance closed in; in the tube run five or six spheres of brass which make a jangling noise whenever the wearer moves about. The outside of the anklets is covered with designs in bold relief, one design is a series of wedges (*puchok rebong*), another is phyllomorphic and a crocodile figures on one example.

Diam. 13·6 cm. to 13·1 cm.

Brooke Low collection.

Catalogue No. 393. (Plate V. fig. 10, *b*).

Similar anklets but made of silver are worn by unmarried Malay girls, and there is little doubt but that the Sea-Dyaks borrowed the ornament from them.

A figure of a Sea-Dyak girl wearing a pair of these anklets in addition to coils of brass wire is given by Ling Roth (l. c. vol. I. p. 21).

Sea-Dyak women, especially the Sibuyaus and Balaus, commonly wear silver armlets known as *tumpa glos* shaped like the wooden armlets worn by men, but hollow and ornamented with repoussé patterns; they are worn from the wrist to the elbow.

Ling Roth figures (l. c. vol. II. p. 74) a Kadyan penannular bracelet of copper with three silver wires running round it and also a metal bracelet from the Baram river with a simple clasp, both specimens are quoted as being in the collection of Mr. C. E. Peek.

Finger Rings.

I. Finger-rings of shell.
II. Finger-rings of brass, copper etc.

I. FINGER RINGS OF SHELL.

1. Sea-Dyak,

a. Made from a ground-down Trochus (?) shell, the outer border has a deep groove running round it.

Diam. 2·6 cm., depth.

Private Srubi of the Sarawak Rangers [P. 28. i. 87].

Catalogue No. 671.

A somewhat similar finger-ring occurs in a collection of witch-doctor's charms in the Sarawak Museum; its outer border has been filed so as to leave a median series of diamond-shaped facets.

II. FINGER RINGS OF BRASS, COPPER ETC

1. Dusun—"penulong."

a. Brass finger ring, the outside slightly bevelled.
Diam. 2 cm.; depth 0·6 cm.
From Kiou, Kina Balu.
Drs. G. D. and H. A. Haviland coll. [P. v. 92].
Catalogue No. 774.

2. Sea-Dyak—" tinchin," finger rings.

These are worn by both sexes; they are said to be made by Malohs of the Kapuas. The seal ring is known as *tinchin bekubun*, all the others as *tinchin sara* or *suran*.

a. Seal ring of brass, the bezel is oval with a conventional flower (?) carved in deep relief on it, the outside of the ring with two grooves.

Diam. 2 cm. Brooke Low collection.

Catalogue No. 607 *a.* (Plate VII. fig. 1 the seal from the front).

b. A broad penannular band of brass, the outside with horizontal grooves and lines of punch-marks.

Diam. 2 cm.; breadth 1·2 cm. Brooke Low collection.

Catalogue No. 607 *b.*

c. Very similar, but with a broad median horizontal groove and two lines of zigzag pattern.

Diam. 1·9 cm.; breadth 1·2 cm. Brooke Low collection.

Catalogue No. 607 *c.*

d. Very similar to *b* but much narrower.

Diam. 1·9; breadth 0·8 cm. Brooke Low collection.

Catalogue No. 607 *d.*

e. Almost identical with *d.*

Diam 1·9 cm.; breadth 0·7 cm. Brooke Low collection.

Catalogue No. 607 *e.*

f. Almost identical with *d.*

Diam. 1·9 cm.; breadth 0·6 cm. Brooke Low collection.

Catalogue No. 607 *f.*

g. Very similar to *d* but the brass much thinner.

Diam. 1·9 cm.; breadth 0·7 cm. Brooke Low collection.

Catalogue No. 607 *g.*

h. Very similar to *c* but narrower; the broad median groove has a line of herring-bone pattern on each side of it.

Diam. 1·9 cm.; breadth 0·7 cm. Brooke Low collection.

Catalogue No. 607 *h.*

i. Very similar to *d* but narrower.

Diam. 1·9 cm.; breadth 0·5 cm. Brooke Low collection. Catalogue No. 607 *i.*

j. Very similar to the above, but the grooves and incised lines very finely marked.

Diam. 1·9 cm.; breadth 0·5 cm. Brooke Low collection. Catalogue No. 607 *j.*

k. Very similar to *d*, *e*, *f*, but with a broad band of incised ovoid figures running round the outside of the ring.

Diam. 1·9 cm.; breadth 0·7 cm. Brooke Low collection. Catalogue No. 607 *k.* (Plate VII. fig. 7).

l. A narrow penannular ring of brass, the outside slightly bevelled and decorated with a median row of circles, flanked on either side with an incised zigzag line.

Diam. 1·9 cm.; breadth 0·5 cm. Brooke Low collection. Catalogue No. 607 *l.*

m. A thick narrow ring of copper, the outside decorated with vertical grooves.

Diam. 2·1 cm.; breadth 0·2 cm. Brooke Low collection. Catalogue No. 607 *m.*

n. A thin narrow ring of copper, the outside decorated with a row of incised circles, between each circle two crescents back to back.

Diam. 1·9 cm.; breadth 0·4 cm. Brooke Low collection. Catalogue No. 607 *n.*

o. A narrow penannular ring of brass, the outside bevelled and decorated with an incised zigzag between two delicate grooves; the inside is marked with an incised herring-bone design passing suddenly into a row of circles.

Diam. 2·1 cm.; breadth 0·3 cm. Brooke Low collection. Catalogue No. 143 *a.*

p. A narrow penannular ring of brass, the outside decorated with a deeply notched ridge.

Diam. 2·1 cm.; breadth 0·5 cm. Brooke Low collection.
Catalogue No. 143 *b*.

q. Very similar, but smaller and more carefully finished; the notches in the ridge on the outside of the ring have been so cut that a series of star-shaped figures in high relief have been left.

Diam. 1·8 cm.; breadth 0·5 cm. Brooke Low collection.
Catalogue No. 143 *c*. (Plate VII. fig. 8).

r. A penannular ring of brass to which is affixed by a brass rivet a disc of copper with the border deeply and regularly notched; the outside of the ring is decorated with incised lines forming a pattern shewn in the figure.

Diam. of ring 1·9 cm.; breadth 0·6 cm.; diam. of disc 2·5 cm.
Brooke Low collection.
Catalogue No. 143 *d*. (Plate VII. fig. 2. *a*, *b*).

s. A penannular ring of brass, with a curiously shaped bezel occupying half the circumference of the ring; the outside of the ring is decorated with a row of dots in high relief (produced by notching a ridge as in *p*. and *q*).

Diam. 1·9 cm.; breadth 0·7 cm.
Brooke Low collection.
Catalogue No. 143 *e*. (Plate VII. fig. 3. *a*, *b*).

t. A penannular band of brass with a rudimentary bezel formed by cutting vertically the pattern (grooves and lines of punch-marks) which runs horizontally round the rest of the ring,* from each corner of the bezel rises a hook cut out from the ring.

Diam. 1·7 cm.; breadth 1·2 cm. Brooke Low collection.
Catalogue No. 143. (Plate VII. fig. 4).

u. A narrow penannular ring of brass; one free end of the ring has been split into two, the other into three, these split ends have been rolled up into flat coils, the odd one occupying the centre of the quincunx.

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* Except a narrow piece at the back opposite to the bezel.

Diam. 1·7 cm.; breadth 0·3 cm. Brooke Low collection.

Catalogue No. 143 *g*. (Plate VII. fig. 4).

v. A broad penannular band of brass, the borders deeply notched, the outside decorated with grooves, lines of punch-marks and series of incised lines.

Diam. 2 cm.; breadth 3·2 cm. Brooke Low collection.

Catalogue No. 143 *h*. (Plate VII. fig. 6).

Ornaments worn round the body.

I. Rattan girdles.
II. Bead girdles.
III. Chain girdles.
IV. Brass girdles.
V. Corsets.

I. RATTAN GIRDLES.

1. Dusun—"lindanau."

a. Coils of split rattan dyed red and black worn by women round the waist and round the chest, the latter to keep in position the *tabut*, a strip of cloth worn by unmarried girls to cover the breasts.

From Kiou, Mt. Kina Balu.

Drs G. D. and H. A. Haviland [P. v. 92].

Catalogue No. 772.

2. Land-Dyak—"sembed."

a. A coil of split rattan stained red, worn round the waist by women; the coil is prevented from unwinding by being passed several times through one or two brass rings.

From Tabekang, Upper Sadong River.

[Pd. viii. 03].

Catalogue No. 1309.

Similar rattan coils (*tina*) are worn by Sea-Dyak and Murut women.

II. Bead Girdles.

1. Sea-Dyak—" entelo."

a. A girdle composed of five rows of large beads strung on strips of split rattan worn by women suspended from the lower border of the corset. The beads are of three kinds:—(1) long white shell beads made by boring longitudinally the columella of a large gastropod shell (Type 3. Kyan name *ino seh*), (2) large spherical glass beads (Type 6) the dark-blue ones are known as *tobi* and are antique, the paler blue are known as *kamiring* and are more modern; (3) large spherical glazed clay beads, red in colour (Type 9. Kyan name *dara bouin* i.e. pig's blood). These alternate with one another, some shell discs being interspersed. At one end of the girdle is attached a short loop of beads of Type 11, some are blue with a red zigzag (known as *klam batang umar* i.e. bead worth part of a house and often worn hanging from the ear lobe by Kalamantan tribes of the Baram district). (Plate VII. fig. 6); some are of green glass with red and yellow circles painted on (known as *klam buang kowit*, i.e. bear's claws beads) (Plate VIII. fig. 8), and one is a fluted bead, of blue glass (known as *klam dian*, i.e. durian bead,) (Plate VIII. fig. 9) and a few common yellow beads are intermixed.

Length 94 cm. Brooke Low collection.

Catalogue No. 146. (Plate VI. fig. 12, *a*).

It seems likely that this girdle was looted from Kyans by Sea-Dyaks, as some of the beads are antique and antique beads in the possession of Sea-Dyaks have almost invariably been formerly the property of the more aboriginal natives of Borneo.

A portion of this girdle has been figured by Ling Roth (l. c. Vol. II. p. 46).

2. Milano—bead girdle.

a. A girdle composed of five rows of beads strung on strips of split rattan, in the middle is a cross piece of rattan through which the rattan strips pass and at each end are similar cross-pieces; the loose ends of the rattan strips are joined with elaborate knots. The beads are nearly all of Type 6. various shades of blue in colour (*tobi* and *kamiring*), there are four beads of the variety known to Kyans as *klam dian*; one bead is of opaque white glass. The value of the beads 304 in number has been assessed at $150.

Length 62 cm. H. H. the Ranee of Sarawak [P. 24. vi. 95].

Catalogue No. 967.

The girdle was found at Lundu.

Somewhat similar bead-girdles are worn by Kyan and Kenyah women; the beads are generally antique and of Venetian make (Types 9 and 11) and are very highly prized (cf. Ling Roth l.c. Vol. II. p. 55).

Dusun women wear round the hips "rows of red beads closely threaded to a depth or six inches or so" (Whitehead, Exploration of Mt. Kina Balu, p. 106 and Plate).

Murut women wear a somewhat similar bead girdle.

3. Tanjong—"takup."

a. A string of beads of Venetian manufacture blue in colour with white-edged red spots; to the string is attached a piece of *kima* shell (*conus guratensis*).

Worn by little girls.

Brooke Low collection.

Catalogue No. 199. (Plate VI. fig. 12, *d*).

Figured by Ling Roth (l. c. Vol. II. p. 42). Ling Roth on the same page also figures a girdle and shell vine leaf from W. Borneo, the girdle appears to consist of seven strips of rattan on which are threaded numerous small brass rings.

III. CHAIN GIRDLES.

1. Dusun—chain girdle.

a. Consists of twenty-seven small chains of brass wire penannular links; the chains are held together by a string lacing.

The girdle is continous without a fastening so must be slipped over the head and shoulders; it is worn by women over the hip-band of beads noted above.

From the north of Mt. Kina Balu.

Mr. Steffen [P. vi. 92].

Catalogue No. 784. (Plate VIII. fig. 16).

Similar chains are worn by Land-Dyak women of some districts in Upper Sarawak they are known as *sabit.*

2. Sea-Dyak—"tali mulong."

a. A chain band worn by women over the corset. The links are of brass and penannular and they are threaded on string in the same way as beads are threaded in bead-work (Plate VIII. fig. 15). The buckle consists of two strips of brass; the last row of links at each end of the girdle pass through perforations in the strips, the unattached edges of the strips are turned over in opposite directions so that they interlock.

Length 77·5 cm.; breadth 2·8 cm. Brooke Low collection.

Catalogue No. 147. (Plate VI. fig. 12, *b*).

A portion of this girdle is figured by Ling Roth (l.c. Vol. II. p. 46).

IV. BRASS GIRDLES.

1. Sea-Dyak—"senawir."

a. A flat strip of brass bent into a hoop with the ends turned over in opposite directions and interlocking. Forty-two small silver coins of Holland (dates 1718-1789) are suspended by brass links from the lower edge of the girdle and from the coins hang small notched and flat brass pendants. The outside of the brass hoop at one end is incised with simple geometrical designs and a phyllomorphic design. Worn by women over the corset.

Diam. 29·5 cm.; breadth 1·8 cm.

Brooke Low collection.

Catalogue No. 145. (Plate VI. fig. 12, *c*).

A small portion of this ornament is figured by Ling Roth (l.c. Vol. II. p. 46).

Both the *senawir* and the *tali mulong* have been largely displaced by belts made of dollars strung together with silver links, the buckle of the belt is generally of Chinese pattern and make. The Land-Dyak women of the Upper Sadong and Upper Sarawak (left-hand branch) rivers wear similar dollar girdles.

V. CORSETS.

These are worn by Sea-Dyak and Land-Dyak women only; the Land-Dyak corset is of quite a different type to the Sea-Dyak article; there are two varieties of Sea-Dyak corsets:—1. the *rawai*, 2. the *rawai tinchin.*

1. Sea-Dyak—"rawai."

a. Twenty-five circles of strips of pandan leaf, graduated in size, the topmost * is 30·4 cm. in diameter, the lowest is 21·4 cm. On these circles are closely strung numerous small penannular annuli of brass; down the centre of the front of the corset runs a black line formed by 3 rings of rattan-cuticle stained black on each pandan leaf circle, on each side of the black line is a brass ring line flanked by a red strip formed by three rings of rattan cuticle stained red on each rattan circle (cf. ornamentation of *éngkrimu* p. 46). The pandan leaf circles are bound together by five vertical rods of brass wire which transfix all the circles and pin them closely together. There is no means of opening out this corset which has therefore to be slipped over the head and shoulders of the wearer.

Height 21 cm.

Brooke Low collection.

Catalogue No. 144 *a.* (Plate VI. fig. 13, *a*).

b. A similar specimen, but with twenty-eight circles, the topmost is 29 cm. in diam. the lowest 20·5.

Height 23·5 cm.

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* The specimen shown in the figure is upside down.

Brooke Low collection.

Catalogue No. 144 *b*.

Figures of Sea-Dyak women wearing these ornaments are given by Ling Roth (l.c. Vol. I. pp. 2 and 4 Vol. II. frontispiece and page 43). Below the *rawai* round the hips are frequently worn numerous separate pandan leaf circles strung with brass annuli but these may really be considered as components of the corset. It is now the fashion to decorate the *rawai* with rows of dollars attached by brass or silver links to the circles. The rawai should only be worn by married women, but the custom in now more honoured in the breach than in the observance.

2. Sea-Dyak.—"rawai tinchin."

a. Corset composed of ten rows of large broad penannular rings of brass strung on strips of split rattan; the rows are bound together one above the other on an internal framework of split rattan. The rows of rings do not form complete circles, but their ends are attached each to a vertical band of plaited brass wire; to each plaited band is fastened by brass wire links two vertical strips of brass, the free borders of which are turned back in opposite directions so that they can interlock; this primitive form of buckle is known as the *pintu* (*lit*, door). The brass penannular rings vary in breadth from 3·5 cm. to 2·7 cm., their diameter is about 1·8 cm.; simple geometrical and scroll designs are incised on them. Narrow penannular brass rings (4 mm. broad) outwardly notched alternate with the broad rings of the bottom five rows of the corset. The front of the buckle is ornamented with incised geometrical designs and a phyllomorphic design (*tankei marau*, bunches of rattan). The corset is of equal diameter throughout.

Height 19·5 cm.; diam. 24·3 cm. Said to have been made by Malohs of the Kapuas River.

Brooke Low collection.

Catalogue No. 572. (Plate VI. fig. 13, *b*).

This form of corset was formerly confined to the Ulu Ai and Engkari Sea-Dyaks but its distribution seems to be wider nowadays. The front of a somewhat similar specimen in the Leiden Museum is figured by Ling Roth (l.c. Vol. II. p. 46).

3. Land-Dyak—"sladan."

a. Corset worn by unmarried girls and widows: it is a cylinder of bark, slightly elliptical, covered on the outside with close-set vertical strips of triangular brass wire (*ikan rashun*), their ends bent over to clip the upper and lower edges of the bark cylinder. The brass strips that cover the part of the corset which is worn in front are narrower than those at the back.

Height 22 cm.; diam. 23·4 × cm. 21·6 cm.

From Krokong, Upper Sarawak. E. W. Byrde Esq. [P. 8. ii. 04].

Catalogue No. 1401. (Plate VI. fig. 13, *c*).

These corsets are worn by the Land-Dyaks of the right-hand branch of the Upper Sarawak river,* not by those of the left-hand branch or of the Upper Sadong. As can well be imagined the corsets are most uncomfortable to wear and very difficult to put on and to remove; the removal of the corset is indeed a most painful process, the subject hangs by her hands from a beam whilst a friend gradually works the corset off inch by inch; a liberal application of oil is generally needed but even with this aid it may be some hours before the martyr to fashion is relieved of her brass bound casing.

Buttons and Buckles.

I. BUTTONS.

1. Malay (*Brunei*)—"ka'bumban."

a. Nineteen silver-gilt buttons: the buttons which are hollow are made in two halves, the lower half is provided with a loop, the upper half is decorated with a conventional pattern in repoussé.

[Pd. 21. v. 04].

Catalogue No. 1417. (Plate VIII. fig. 10).

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*Krokong, Singgi, Sauh, Serambu, Bombok, Peninjau etc., it is also worn by the Jagoi on the Dutch border.

Very similar buttons are figured by Ling Roth (l. c. Vol. II. p. 42); they are worn by Milano, Kanowit and Tanjong women along the tightly-fitting sleeves of their jackets, also by Brunei Malay and Kadyan women down the front of their jackets. Strings of them are sometimes worn by Sea-Dyak women as necklets and one or two will often serve as the button of a bead necklet.

II. BUCKLES.

Buckles other than the primitive clasps of brass corsets and belts described above are not often met with amongst the Bornean tribes; the specimen described below was probably made in the Malay Peninsula where this kind of work is not uncommonly met with.

1. Malay—buckle.

a. A sharply pointed oval sheet of iron, convex from front to back, the border stepped. A conventional phyllomorphic design has been beaten in *basso relievo* into the front face of the ornament, over this a plate of silver has been laid and the two sheets of metal have been welded together, subsequently the front face of the buckle has been filed until all the silver has been removed except that filling in the sunk phyllomorphic design; the result is a design in silver on a back ground of iron. At the back of the ornament is a large iron loop.

14 cm. × 7·1 cm.

Said to come from Sirhassen, Natuna Islands. [Pd].

Catalogue No. 1037.

The belts made of dollars strung together by silver wire links much worn by Sea-Dyak and Land-Dyak women are generally fastened with a silver S-shaped hook of Chinese manufacture and design.

Explanation of Plates I.—VIII.

Plate I.

Fig. 1. × $\frac{1}{5}$ linear.
    a. Murut *pleng*, hairpin.
    b. ,, ,, ,,
    c. Peluan ,, ,,
    d. Tagal ,, ,,
    e. ,, ,, ,,
    f. Murut hairpin.
    g. ,, ,, ,,
    h. Peluan ,, ,,

Fig. 2. × $\frac{1}{4}$ linear.
    a. Murut brass hairpin worn by either sex.
    b. ,, ,, ,, ,, ,, ,, ,,
    c. Kalabit *plin*, hairpin worn by men.
    d. Dusun *timbok*, hairpin worn by women
    e. ,, ,, ,, ,, ,, ,,
    f. Malay *sisir penyu*, tortoiseshell comb.

Fig. 3. × $\frac{1}{6}$ linear.
    a. Malay *tajok*, head ornaments worn by bridegrooms.
    b. ,, *sisir*, tiara worn by brides.
    c. Sea-Dyak *kong-kong rekong*, bead-work necklet.
    d. Kyan bead-work necklet.

Plate II.

Fig. 4. × $\frac{1}{6}$ linear.
    a. Land-Dyak *bobot*, necklet worn by men.
    b. Murut *bani*, bead necklet worn by women.
    c. Land-Dyak *pangia*, necklet worn by female witch-doctors.

Fig. 5. × $\frac{2}{7}$ linear.

a. Tanjong *ariek lasong*, a pair of brass earrings worn by women.
b. Kanowit *ariek geragum lasong*, a pair of brass earrings worn by women.
c. Long Gilat tin earrings worn by men.
d. Tanjong *ariek semera*, tin earring worn by women.
e. Kanowit *ariek spenge*, one copper earring from a set of ten worn by women.
f. Land-Dyak *anteng*, earrings worn by men in festal dances.

Plate III.

Fig. 6. × $\frac{1}{5}$ linear.

a. Sea-Dyak *langgu bangkang*, pair of tin ear-pendants worn by men.
b. Bakatan *urut* ,, ,, ,,
c. ,, ,, tin ear-pendant.
d. Gold ornament found in river gravel at Pankalan Ampat.
e. Kyan a pair of ear ornaments worn by chiefs.
f. Leppu Tau *isang*, ear-pendant of horn worn by men.

Fig. 7. × $\frac{1}{4}$ linear.

a. Kanowit *buah bitok lasong*, a pair of brass ear-drops worn by women.
b. ,, *buah belimbien* ,, ,, ,,
c. Tanjong *isang lasong* ,, ,, ,,
d. Kanowit *buah livong lasong* ,, ,, ,,
e. Bakatan *lungin*, a pair of brass ear-drops worn by women.
f. Kyan *buah livong batu jela*, a pair of ear-drops of serpentine and horn worn by women.

Plate IV.

Fig. 8. × ¼ linear.

- *a.* Sea-Dyak *kenawieng*, ear-pendants of brass worn by men.
- *b.* Sea-Dyak *grunjong ikat*, earrings worn by men.
- *c.* ,, ,, *grunjong buri*, ,, ,, ,, ,,

Fig. 9. × ⅓ linear.

- *a.* Kenyah *bula wai*, ear-pegs carved from casque of Rhinoplax vigil.
- *b.* Kyan *udang betelu* ,, ,, ,, ,,
- *c.* Skapan *udang*, a pair of canines of Felis nebulosa, worn as ear-pegs.
- *d.* Malay *subang*, a pair of ear-plugs worn by women.
- *e.* Murut *oul gading*, a pair of ear-plugs worn by men.
- *f.* Sea-Dyak *tensa pending*, a pair of ear-plugs worn by women.

Plate V.

Fig. 10. × ⅕ linear.

- *a.* Sea-Dyak *simpai tapang*, three wooden armlets worn by men.
- *b.* Sea-Dyak *gerang giring*, brass anklets worn by women.
- *c.* Kyan ivory armlet worn by chiefs.
- *d.* Sea-Dyak *tumpa sidieng*, brass bracelets worn by women.

Fig. 11. × ⅕ linear.

- *a.* Sea-Dyak *tuchong simpai*, shell armlet worn by men.
- *b.* Sea-Dyak *selong* brass wire leglets worn by women.
- *c.* Sea-Dyak *tumpa gelong*, brass wire armlets worn by men.
- *d.* Sea-Dyak *engkrimu*, leglets of rattan and brass annuli worn by men.

Plate VI.

Fig. 12. × $\frac{1}{7}$ linear.

a. Sea-Dyak *entelo*, bead girdle worn by women.

b. Sea-Dyak *tali mulong*, brass chain band worn by women.

c. Sea-Dyak *senawir*, brass girdle with silver coins worn by women.

d. Tanjong *takup*, shell vine leaf and bead string worn by little girls.

Fig. 13. × $\frac{1}{6}$ linear.

a. Sea-Dyak *rawai*, corset.

b. ,, ,, *rawai tinchin*, corset.

c. Land-Dyak *s'ladan*, corset.

Plate VII.

Nat. size

Fig. 1. Seal of Sea-Dyak *tinchin bekubun*, brass finger ring.

Fig. 2. Sea-Dyak *tinchin suran* brass finger ring A. front view B. side view.

Fig. 3. ,, ,, ,, ,, ,, ,, ,, ,, ,,

Fig. 4. ,, ,, ,, ,,

Fig. 5. ,, ,, ,, ,,

Fig. 6. ,, ,, ,, ,,

Fig. 7. ,, ,, ,, ,,

Fig. 8. ,, ,, ,, ,,

Plate VIII.

Fig. 1. Dusun wooden comb worn by women. Nat. size.

Fig. 2. Kadyan *subang*, wooden ear-plug worn by women. Nat. size

Fig. 3. ,, ,, ,, ,, ,, ,, Nat. size

Fig. 4. Murut *oul buluh*, bamboo ear-plug worn by men. Nat. size

Fig. 5. Modern Venetian bead of glazed clay. × 2

Fig. 6. Antique bead, known as *klam batang umar*, blue glazed clay with red pattern. Nat. size

Fig. 7. Antique bead known as *klam uit*, black with yellow stripes. Nat. size

Fig 8. Antique bead known as *klam buang kowit* of green glass with red and yellow circles. Nat. size

Fig. 9. Antique bead known as *klam dian*, of blue glass, fluted. Nat. size

Fig. 10. Brunei Malay *ka'bumban*, silver-gilt button. Nat. size

Fig. 11. Uma Kelap head ring of rattan work. × ½

Fig. 12. Sea-Dyak *tenklai lengan*, rattan bracelet. × ¾

Fig. 13. (A. B.) carvings on Kyan ivory bracelet. Nat. size

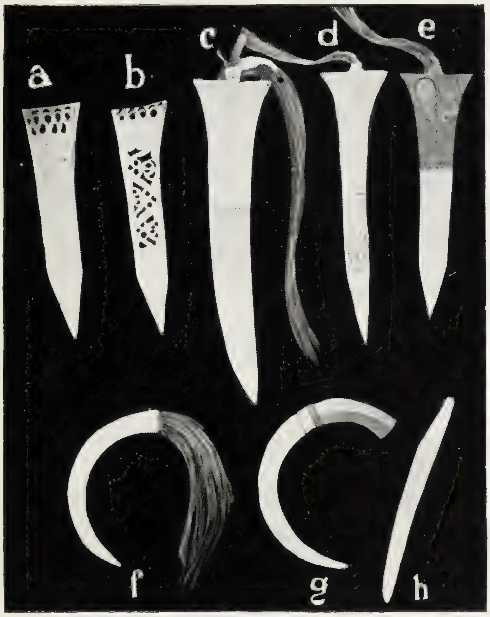
Fig. 14. Sea-Dyak *langgu temaga*. brass earring worn by men. Nat. size

Fig. 15. Diagrammatic representation of the links in Sea-Dyak *tali mulong*, chain girdle.

Fig 16. Ditto of Dusun chain girdle.

STRAITS BRANCH, ROYAL ASIATIC SOCIETY.

JOURNAL 43. PLATE I.



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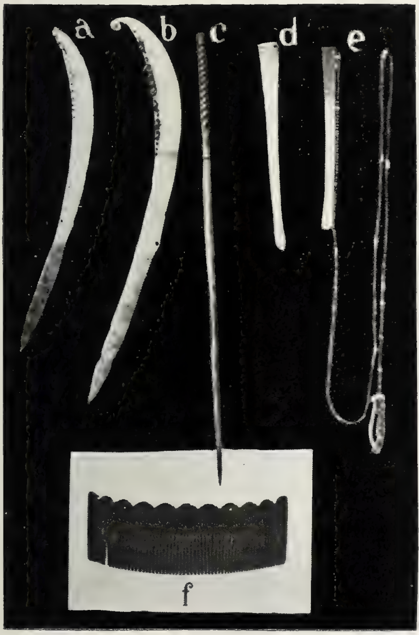

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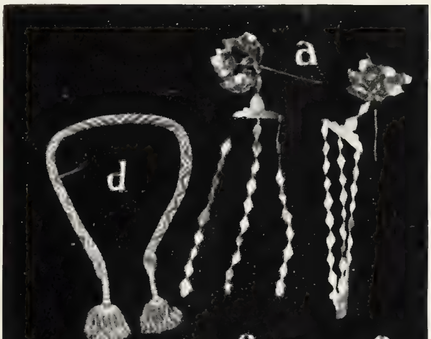

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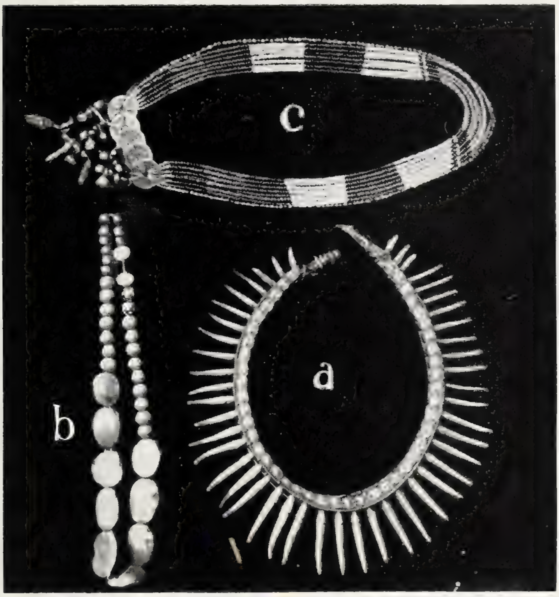

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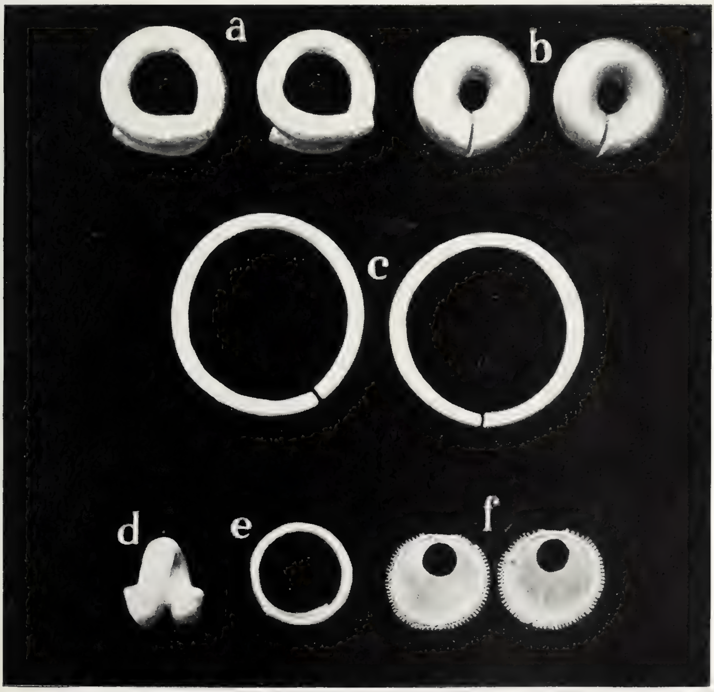

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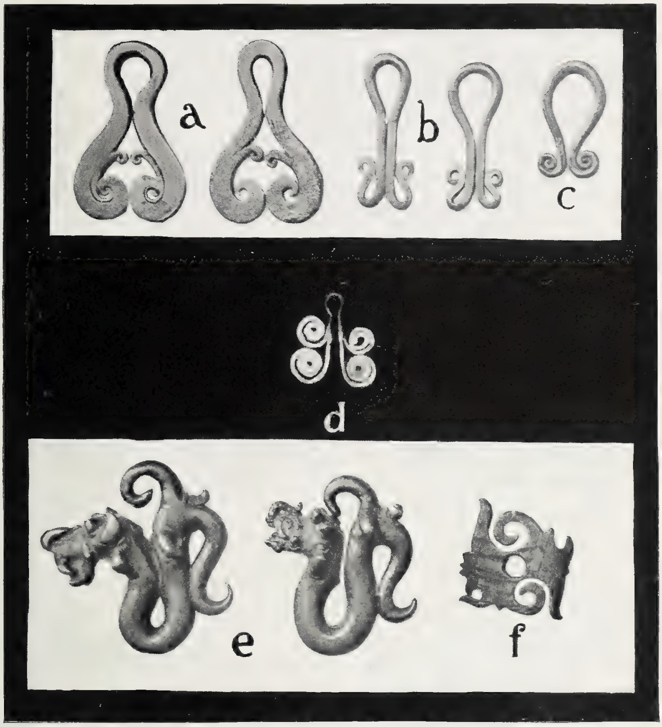

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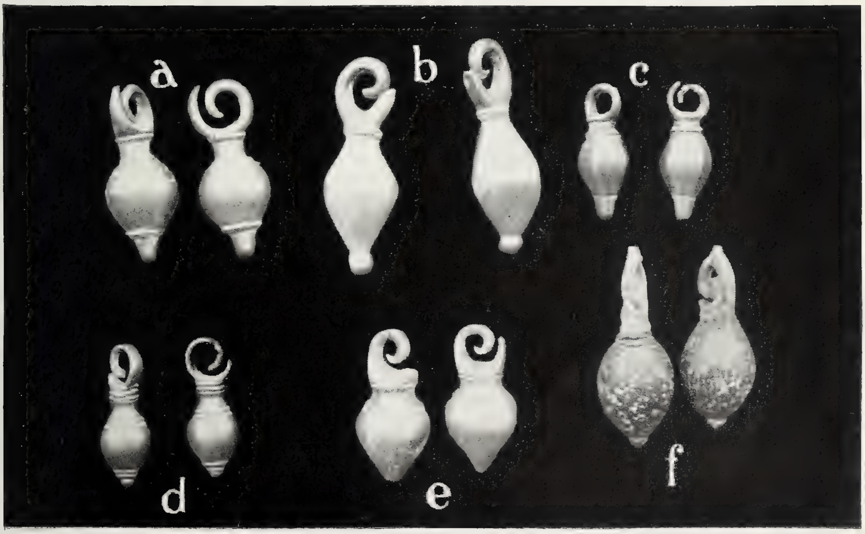

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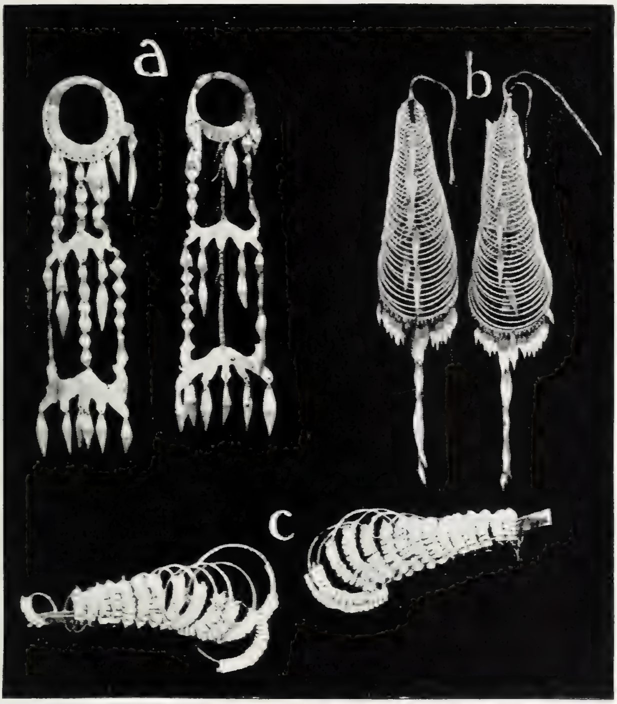

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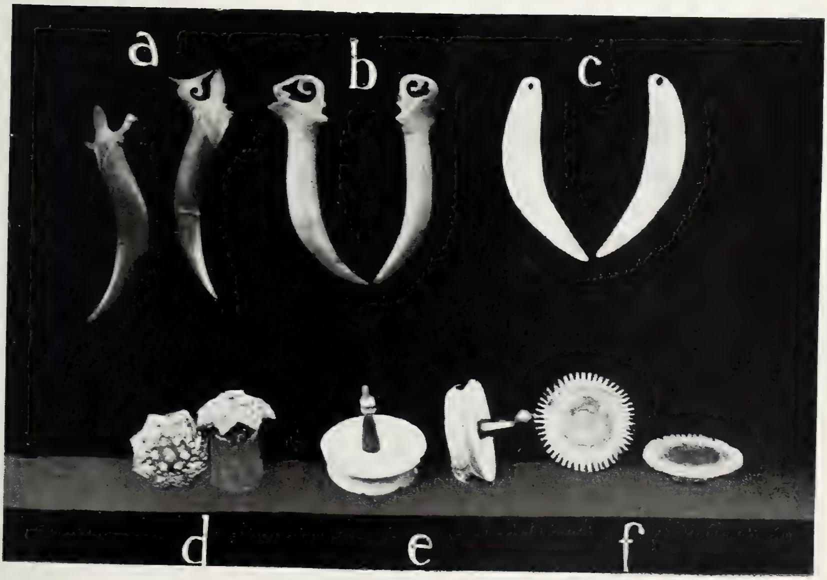

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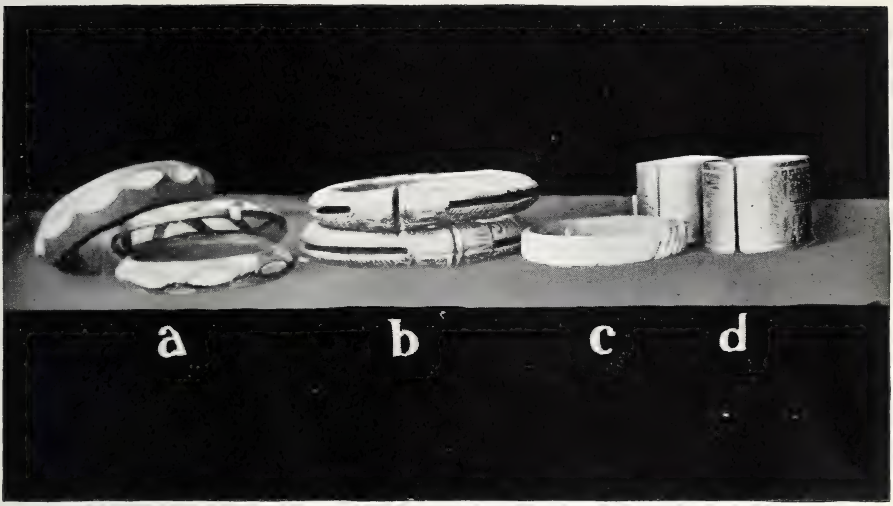

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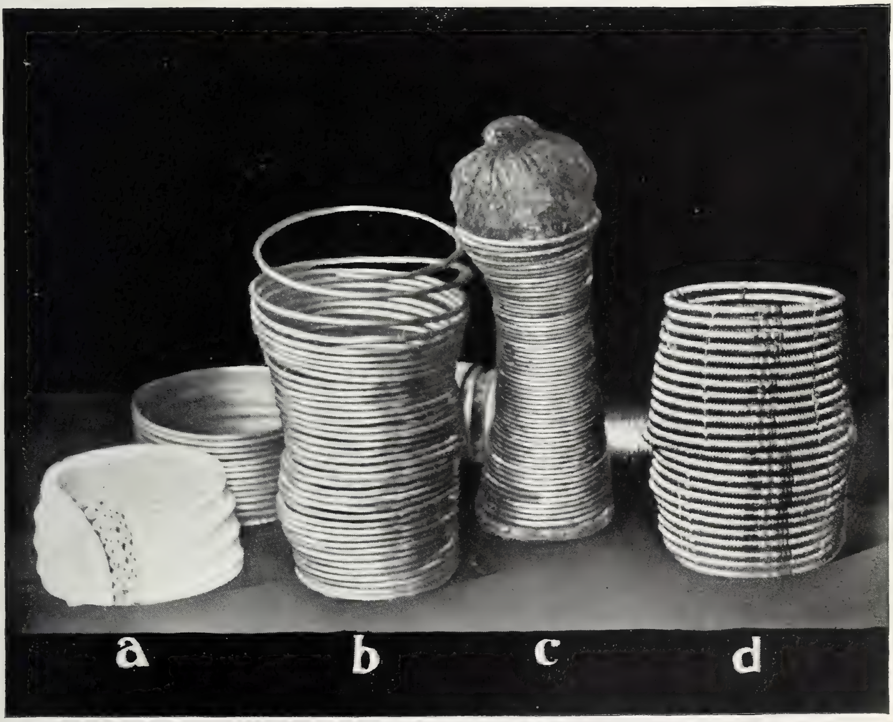

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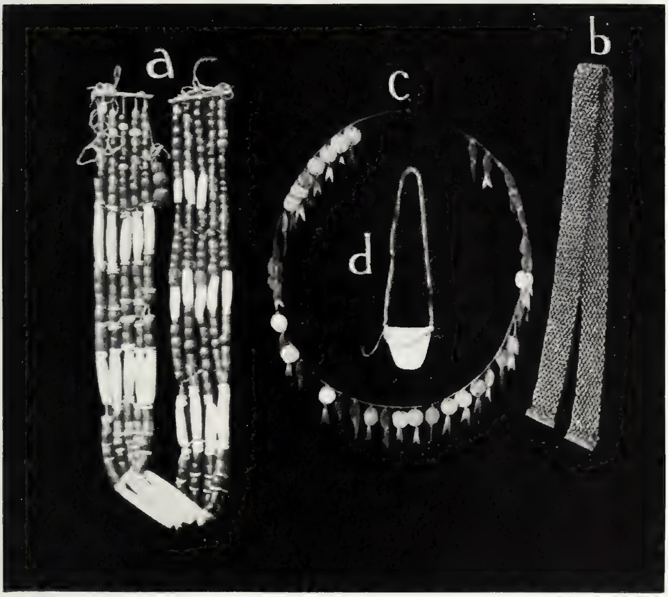

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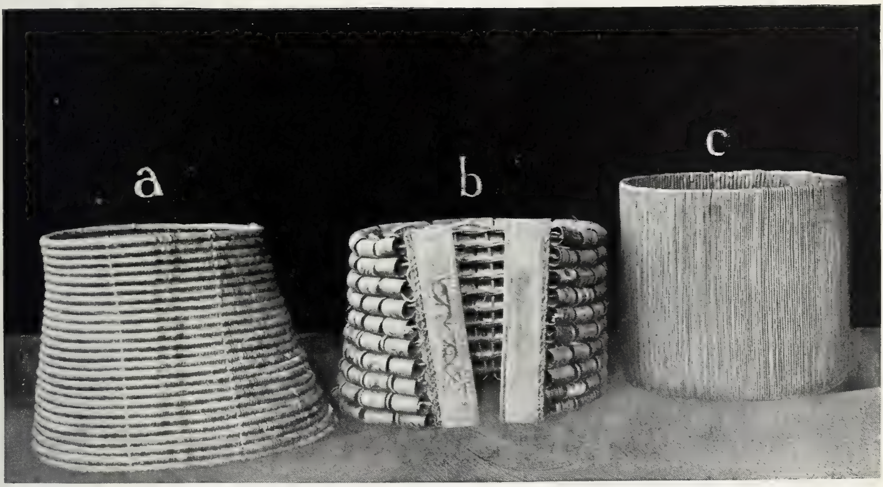
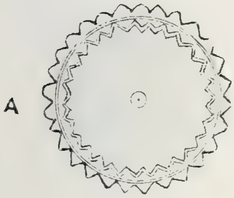


Fig. 13.

Journal 43. Plate VII.



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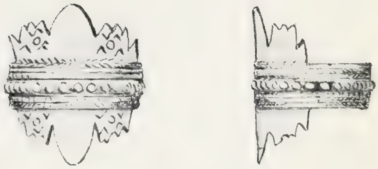

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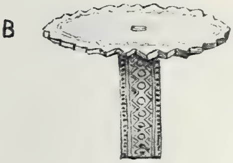

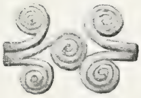

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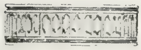

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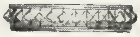

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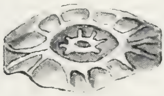

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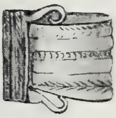

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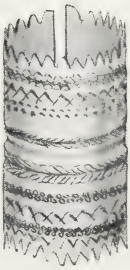

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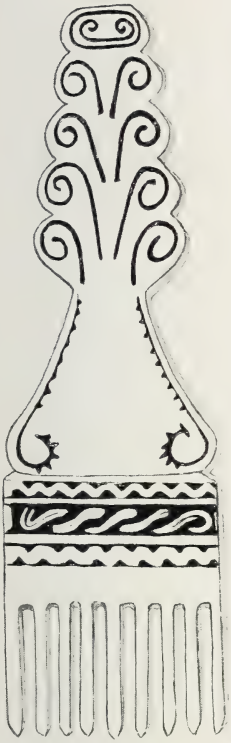

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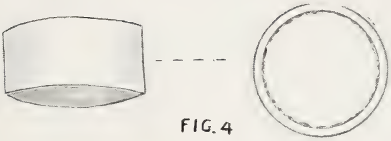

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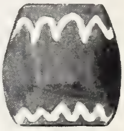

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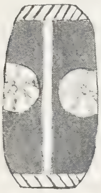

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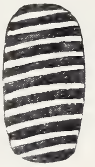

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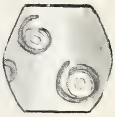

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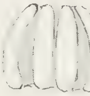

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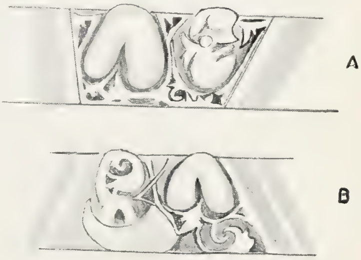

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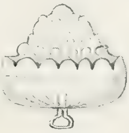

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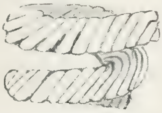

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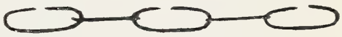

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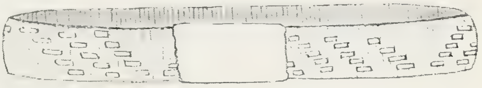

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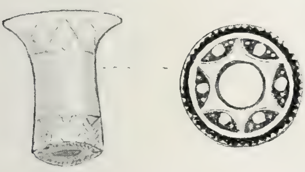

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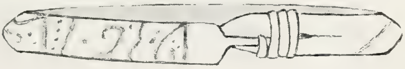

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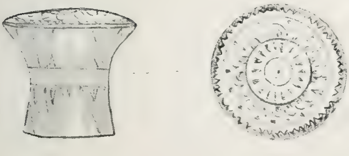

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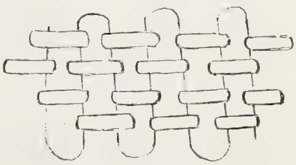

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Wood, C. G.	Batu Gajah, Perak.
Wolff, E. C. H.	Seremban, N. Sembilan.
Winstedt, R. O.	Tapah, Perak.
* Young, H. S., F.C.S.	Bau, Sarawak.

PROCEEDINGS

of the

Annual General Meeting.

The Annual General Meeting was held January 23rd, 1905.

Present. Right Reverend BISHOP HOSE (President) Hon. W. R. COLLYER I.S.O., Dr. HANITSCH, Mr. G. MAXWELL, Mr. BARTLETT, Mr. P. J. BURGESS, Mr. C. B. KLOSS, Mr. BROCKMAN, Mr. W. G. St. CLAIR, Mr. C. J. SAUNDERS, Mr. MAKEPEACE, Mr. WATKINS, Mr. V. FLOWER, Mr. H. N. RIDLEY.

The minutes of the last General Meeting were read and confirmed.

The reports of the Council and Treasurer were laid on the table and their adoption moved by Mr. C. J. SAUNDERS seconded by Mr. G. MAXWELL and they were unanimously adopted.

The members elected by the Council for the previous year were formally confirmed in their election by the meeting.

The Officers and Council for the new year were then elected viz. :

President: Right Reverend Bishop HOSE.
Vice President for Singapore: Hon. W. R. COLLYER.
Vice President for Penang: Hon. J. K. BIRCH.
Hon. Secretary: H. N. RIDLEY.
Hon. Treasurer: Dr. HANITSCH.

Councillors: Mr. W. G. St. CLAIR, Mr. G. MAXWELL, Mr. C. B. KLOSS, Mr. V. FLOWER, Mr. A. KNIGHT.

The President proposed that H. E. the Governor should be asked to become Patron of the Society which was unanimously agreed to.

Mr. St. CLAIR proposed a vote of thanks to the Bishop, as President for the previous year which was carried unanimously.

The President proposed a vote of thanks to the Hon. Secretary and Treasurer which was carried unanimously.

The Meeting then adjourned.

Annual Report for 1904.

The Council are pleased to report again that the affairs of the Society are in the matter of its finances in an extremely satisfactory condition.

Two numbers of the Journal were published during the year, and two more are in the printers' hands. Of the two published, one by Mr. Shelford contains a well illustrated account of the musical instruments of Borneo in the Sarawak Museum. Another catalogue of the personal ornaments of the Dyaks by the same author has been received, with a series of photogravures and other illustrations. The supply of interesting papers by various members of the society dealing with Ethnological, Natural History and Geographical subjects relating to the Malay Peninsula and its neighbourhood is greater now than in former years, and there is little difficulty in producing Journals worthy of the Society.

The Map of the Malay Peninsula is now nearly out of print, and it will be necessary shortly to produce a new edition. Some materials for this have already been collected, and the Council will be glad to receive any further materials additions or corrections.

The Council have to express the greatest regret for the death of two members who have always taken a prominent part in the affairs of the society and were for a considerable time members of the council, Mr. C. W. Kynnersley and Mr. H. Eschke. The first-named gentleman was Vice-President for Singapore till he left for England in April, and had written several papers for the Journal, one of which dealing with his travels in Southern Siam has just been printed. Mr. Eschke was also a member of the council for some years, and was so at the time of his death. The Society has also lost by death Datoh James Meldrum, Datoh Bintara Dalam, and Mr. J. B. M. Vermont, C.M.G.

The new members elected during the year were

Lieut. Col. G. C. E. Van Daalen
Mr. F. H. Staples.
Mr. H. C. Robinson.
Dr. H. M. Harrison.
Mr. H. F. Williams.
Mr. E. M. Schwabe.
Datoh Mahomed bin Mabob.
Mr. R. J. Bartlett.
Mr. V. Flower.
Mr. H. Young.
Mr. R. O. Winstedt.
Mr. F. H. Dallas.

A number of books, pamplets and journals have been received and added to the library, and the council have decided to employ clerical assistance in completing the catalogue.

The Society now exchanges publications with fifty-nine English and foreign societies and institutions, two additional exchanges having been arranged this year, viz. with

The Department of Archæology, Simla.
The Missouri Botanical Gardens.

HONORARY TREASURER'S ACCOUNT FOR THE YEAR 1904.

	$	c.	$	c.
Balances brought forward from 1903:—				
Mercantile Bank, Fixed Deposit	2700	...		
Chartered Bank, Fixed Deposit	1000	...		
Mercantile Bank, Current Account	549	29		
Chartered Bank, Current Account	347	27		
			4596	56
Receipts in 1904:—				
Subscription for 1902	5	...		
do. ,, 1903	35	...		
do. ,, 1904	440	...		
do. ,, 1905	15	...		
Life Membership ...	100	...		
Sale of Journals ..	370	07		
Sale of Maps	730	83		
Sundry Recoveries ...	2	...		
Bank Interst	153	88	1851	78
			6448	34

	$	c.	$	c.
Payments in 1904:—				
American Mission Press ...	379	85		
Thacker & Spink	123	21		
Book-binder	30	45		
Clerk's Salary	60	...		
Peon's Salary	24	...		
Postages and Petties... ...	51	24		
			668	75
Balances carried forward:—				
Mercantile Bank, Fixed Deposit	2700	..		
Chartered Bank, Fixed Deposit	2300	..		
Mercantile Bank, Current Account	753	80		
Chartered Bank, Current Account	25	79	5779	59
			6448	34

Audited and found correct

P. J. BURGESS.

R. HANITSCH,

Honorary Treasurer, Straits Branch, Royal Asiatic Society.

The Gesneraceae of the Malay Peninsula.

By H. N. Ridley.

There is perhaps no order of plants in the Malay Peninsula which contains so large a percentage of ornamental flowering species, as that of the Gesneraceæ or Cyrtandreæ. Few indeed are those which either in foliage or more often in flower do not strike the eye of a botanist in our hill woods. Unfortunately a considerable number are by no means easy of cultivation and among these the most difficult are the small half-shrubby kinds, Didymocarpi and Didissandras which possess the most beautiful flowers of every colour from white to red, blue and yellow. A bank covered with a mass of *Didymocarpus quinquevulnera* as it may be seen along the Tras route or in the Pahang woods is worth going a long way to see.

The number of species recorded in this paper as occurring in the Malay Peninisula is 121 and it is probable that at least as many more remain uncollected, as several of the genera are remarkably local, so that each mountain ridge may be expected to produce one or more species. In the Flora of British India the number of species recorded from the Malay Peninisula was 22, but at the time that that part of the work was published (1884) almost all that were known were from Penang, Singapore and Malacca. Since then I have myself collected a large number, in Perak, Pahang, Selangor and elsewhere. Mr. Curtis obtained a very large series of new species from the limestone Islands of Lankawi, a very rich district, and I have also seen the collections of Scortechini, Kunstler and Wray from the Perak Hills, loaned to me by Dr. Prain of the Calcutta Gardens. In 1895 I published in the Linnean Society's Journal a paper on Cyrtandraceæ Malayenses (vol. XXXII p. 497) containing a list of 72 species, all that were known at the time.

Jour Straits Branch R. A. Soc., No. 43, 1905.

GENERA.

Æschynanthus, an epiphytic genus with plumed seeds easily drifted by the wind, is the most widely diffused genus in the surrounding islands. One Borneo-Siamese species occurs as far south as Lankawi, several occur in Sumatra and Borneo as well as the Peninisula, and the number of endemic species is small compared with other genera.

Agalmyla is a small genus of climbers, of which one species is abundant in the Perak hills, and Sumatra and Java. It has also plumed seeds.

Didissandra as laid down by Mr. Clarke comprised all *Didymocarpi* as defined by him which had four complete stamens instead of two. I have preferred to separate from *Didymocarpus* the plants with short-tubed flower, and very short stamens with a distinctly longer style. This principle excludes also from *Didissandra* several of Mr. Clarke's sections. Such plants as *D. ornata* of Borneo are more nearly allied to Boea and Paraboea than to *Didymocarpus*. *Didissandra* thus as far as regards the Malay Peninsula includes two sections, which might almost be made distinct genera: the section *Cyrtandroides* (Clarke) tall shrubby plants with distant leaves and flowers in the lower axils, two species; and the very distinct section *Speciosœ*, with 71 species of small shrublets with crowded leaves and large and showy blue, white or yellow flowers, a very distinct group, of which I have not seen any species even from Sumatra or Borneo. In some respects they approach the section *Heteroboea* of *Didymocarpus*, and one very charming white flowered plant *Didymocarpus venustus* possesses all the characteristics of this group of *Didissandra* except that it has but two stamens.

Didymocarpus even excluding the genera *Loxocarpus* and *Paraboea* contains a considerable variety of forms but it is very difficult at present to split the genus further. It includes all the long tubed plants with two filiform stamens and a simple stigma. Among the aberrant forms we find *D.*

corchorifolia a stout much branched woody shrub, with flowers of the form of a snapdragon (*Antirrhinum*) the upper and lower lips of the corolla being pressed together, and some species such as *D. pumila* quite dwarf and stemless with short flowers, but with the pistil and stamens of other species. *D. lilacina* from Pahang is also quite abnormal having very small flowers borne on a short peduncle adnate to the leaf petiole. This would perhaps be better made into a distinct genus; many of the other species however fall into natural groups, such as the section *Heteroboea*, shrublets with crowded rough leaves, and large trumpet-shaped flowers slender axillary peduncle. The plants of this section are almost confined to the Peninsula disappearing north of Penang, and less abundant in Borneo and Sumatra.

Didymocarpi seem more scanty in Borneo than in the Malay Peninsula, and the sections most abundant there are those that are rare here. A group of almost stemless little plants, lanceolate or oblanceolate sometimes peltate leaves and small violet or white flowers (§ *Kompsoboea* of Clarke excluding *D. Kompsoboea* a plant closely allied to *D. platypus*) is represented by *D. heterophylla*, *D. perdita* etc., in the Peninsula where they are characteristic of the low country or bases of the hills, and several species occur in the Natunas and Lingga Island. The lowland *Salicinæ* with narrow crowded leaves sometimes deeply cut occur in Borneo as far as Labuk Bay and in Lingga. These two groups are absent from the hill forests of the interior above 1,000 feet elevation.

The species of this genus are as local in their distribution as those of *Didissandra*; of forty-four species only four have been met with outside the Pennisula and most of the endemic species are only at present known from single localities of small area.

Chirita is a genus also of somewhat heterogeneous nature, distinguished by its bifid style. The flowers are in many species of an azure blue, an unusual color in the order, and frequently have the mouth of the corolla tube bearded with yellow hairs. The headquarters of the genus is India and Southern China, but a number of species occur in Java and Sumatra, mostly in the limestone districts. Six species occur in the Peninsula, five of which are endemic and one gets to Siam.

Loxocarpus, a small genus referred to *Didymocarpus* as a section by Mr. Clarke, seems sufficiently distinct in its short tubed and short stamened flowers and horn-like capsule. All the species are closely allied. There are about 7, of which three endemic ones occur in the Malay Peninsula, the remainder in Borneo.

The next three genera comprise the plants with short tubed flowers, 2 very short stamens with longer style, and narrow cylindric fruit. *Paraboea* is merely distinguished from *Boea* by its capsule not twisting when splitting. The genus was amalgamated with *Didymocarpus* by Clarke, but should certainly be kept separate. In *P. cordata* and two allied species, the corolla is campanulate. The other species have hardly any tube to the corolla at all. This latter section is confined to limestone rocks, while *P. cordata* and its allies are found on granite or sandstone. The flowers are all small and white or at most tinted with pink. There are about 20 species known, some from Borneo and Siam. All the 12 Malay Peninsula species are endemic.

Boea resembles *Paraboea* except that the capsule is spirally twisted in dehiscing. It includes about 22 species, ranging India, Khasiya hills, through Burma, China, Formosa and Cochin China, the Malay islands to New Guinea, and the Philippines to Australia and New Ireland. All the species known to me inhabit limestone rocks, except *B. elegans*, which grows on the granite precipices of Kedah Peak. They are usually half-shrubby plants with silvery white leaves covered with felted silky hairs. There are two sections, one has usually tall leafy stems rising from a large rosette of leaves, with a woody stem below which grows in clefts of rocks. The flowers are often very large quite flat, azure blue or rose color, and very beautiful. The other section has a slender peduncle rising from the tuft of leaves, as in *Paraboea*, and the leaves are often covered with red or ochre wool beneath, the flowers are smaller often quite small, white rose or lilac. All the species recorded from the Peninsula, 9 in number, are endemic.

Phylloboea differs only from *Boea* in the calyx being trifid instead of five lobed. Two species are known, one from Burma and the endemic species of the Lankawi islands. The latter has rather weak leafy stems, with silvery leaves like those of Boea, and purple blue flowers.

Boeica is a small genus of five species differing from *Paraboea* only in having four complete stamens. Four of the species which are half shrubby plants with much branched cymes on a long slender peduncle, are found in India and Burma. The only one from our region is a very small plant with a short peduncle bearing 2 or 3 pink flowers which occurs in the Lankawi islands.

In the remaining genera of the order the fruit is not a long slender beaked capsule but oblong, or almost globose, or a pyxis.

Orchadocarpa is a monotypic genus, containing a single species, a dwarf plant with a lax cyme of lilac flowers, the sepals free to the base, longer than the small oblong hairy capsule. It seems most nearly allied to *Loxonia* a native of Java and Sumatra.

Rhyncoglcssum is a weak erect almost glabrous herb with a raceme of blue flowers. Two species are known, one from the Philippines, the other occurring in India and Burma and through all the Malay islands to the Philippines. It seems to be very common throughout this region but is rare in the Peninsula.

Epithema is a small genus of soft limestone rock herbs with a tuft of very small blue or white flowers in a head, and a pyxis-like capsule, opening by a cap. The species are very closely allied and perhaps might all be classed as one somewhat variable one, except a single African species. The others extend over all the islands and into India, and our single species occurs wherever there are limestone rocks.

Monophyllaea is also a limestone rock genus remarkable for possessing a single often very large leaf, and a scorpioid cyme or panicle of very small white flowers. There are 9 species known ranging from Southern Siam to Sumatra, Borneo and Java. Two species occur in the Peninsula, one also in Java and Sumatra, and the other endemic.

Stauranthera is a small genus of 3 species of soft herbs with blue or violet flowers. Two species occur in the Peninsula and also in Burma and Assam, the third species in the genus is Javanese.

Rhynchotechum is a genus of 9 species of which 6 are Indian and Burmese, two occur in Java one of which is not rare in the hills of the Peninsula. It is a small shrub with panicles of small cream white flowers.

Cyrtandromæa are shrubby plants of rather coarse habit occurring on banks in woods. They have white flowers protruding from a red calyx, rather showy. Nine species are recorded from Tenasserim and the Nicobar islands to Sumatra and Java. Three species occur in the Peninsula one of which is found also in Sumatra.

Cyrtandra is a large genus of 170 species occurring from the Sandwich islands through the Malay islands into the Peninsula as far north as Penang. Abundant in the Polynesian and Malay islands, they are scanty in the Peninsula where we have only 7 kinds of which four are endemic. The other three occur in Sumatra also. They are shrubby plants with heads of yellow white or red flowers from the axils of the lower leaves. The fruits are sausage shaped corky berries, with minute seeds.

They inhabit dense forests often forming large patches on the ground. A few are however epiphytic.

Summary of Distribution.

There are at present known 121 species of the order in the Peninsula, belonging to 18 general. Of these 95 are endemic, 7 occur also in Burma and Siam, 17 occur also in Sumatra and 9 in Borneo, 5 only in Java, only a single species occurs in India beyond Burma, and only 4 in the islands further east than Java.

Habitats. The greater number of species are hill plants growing on rocks or banks at an altitude of from 1 to 6000 feet elevation. The species occurring in the low-lying country are few, one or two species of *Didymocarpus* chiefly of the *Heteroboea* section and some *Cyrtandras* and *Stauranthera.* Besides which are several of the epiphytic *Aeschynanthi.* All these lowland plants disappear as one ascends the hills and are replaced by a different series. The limestone rocks are very prolific in species and several genera are quite peculiar to them. Such are *Boea*, *Monophyllœa*, *Epithema*, *Phylloboea.*

Genus.	Distribution.	No of Species.
Aeschynanthus ...	Indo-Malaya, Siam, Hongkong ...	70
Agalmyla	Malaya	3
Didissandra	,, ...	20
Didymocarpus ...	Indo-Malaya	100
Chirita	Indo-Malaya, China	50
Loxocarpus	Malay Peninsula and Borneo ...	7
Paraboea	Siam, Malay Peninsula, Borneo ...	20
Bœa	India, Siam, Malaya, China ...	22
Phylloboea	Siam	2
Bœica	Burma, Malay Peninsula ...	5
Orchadocarpa ...	Endemic	1
Rhynchoglossum ...	Tenasserim to Malay Islands ...	2
Epithema	Trop. Africa, India, Malaya ...	6
Monophyllaea ...	Siam, Malay Islands	9
Stauranthera	Assam to Java	3
Rhynchotecum ...	India to Philippines	9
Cyrtandromœa, ...	Tenasserim, Nicobars, and Islands	9
Cyrtandra	Malay Peninsula and Islands to Polynesia	170

No. of Mal. Pen. Species.	Endemic.	Burmah and Siam	Sumatra.	Borneo	Java-	Other Islands.
11	3	1	5	5	2	1
1	...	...	1	...	1	...
13	13	..	..	...	...	...
44	40	...	3	2	...	1 Lingga,
6	5	1	...	...	...	...
3	3	...	...	...	...	...
12	12	...	...	...	...	...
9	9	...	...	...	...	...
1	1	...	..	...	...	..
1	1	...	...	...	...	...
1	1	..	...	...	...	...
1	...	1	1	...	1	Amboina Timor Philippines.
1	...	...	1	1	1	...
2	1	..	1	...	1	...
2	...	2	...	...	...	...
1	...	1	1	..	1	...
3	2	..	1	...	...	...
7	4	1	3	1	1	1

GESNERACEÆ.

Herbs or shrubs, usually pubescent, leaves opposite or apparently alternate, one of each pair being much reduced, simple entire or lobed. Inflorescence axillary, cymose or racemose or panicled, bracts small or large, sepals 5 often connate, corolla tubular or campanulate, more or less distinctly bilabiate, 5 lobed, lobes oblong or rounded. Stamens 4 or 2 rudimentary or absent, didynamous when four, filaments linear or filiform, or short and thick anthers linear or oblong, or scutiform connivent in pairs, 2 celled, cells splitting on the inner face. Disc cylindric or annular or absent, ovary cylindric or oblong. Style slender simple, stigma capitate, cordate or bilobed. Fruit a capsule linear cylindric fusiform, or oblong, splitting dorsally, seeds very numerous minute, plumed in epiphytic species, elliptic and not plumed in terrestrial species ; or a fleshy berry (*Cyrtandra.*)

Species about 600, all tropical species with a few in subtropical climates.

I. Fruit capsular cylindric.

A. Seeds plumed.

  Stamens 4 perfect — 1 *Æschynanthus.*

  Stamens 2 perfect — 2 *Agalmyla.*

B. Seeds not plumed.

Corolla infundibuliform, filaments long filiform.

  Stamens 4 — 3 *Didissandra*

  Stamens 2.

    Stigma entire capitate obovate — 4 *Didymocarpus.*

    Stigma bifid — 5 *Chirita.*

Corolla tube short campanulate.

  Stamens 2.

    Capsule conic — 6 *Loxocarpus.*

    Capsule cylindric not twisted — 7 *Paraboea.*

    Capsule cylindric twisted

Calyx 5 lobed 8 *Boea.*
Calyx 3 lobed 9 *Phylloboea.*
Stamens 4 10 *Boeica.*

II. Capsule ovoid or ellipsoid.
Stamens 2.
Sepals free to base 11 *Orchadocarpa.*
Calyx campanulate, half lobed 12 *Rhyncoglossum.*
Stamens 4.
Capsule circumsciss 13 *Epithema.*
Capsule irregularly splitting
Herbs with one leaf, Flowers minute 14 *Monophyllœa.*
Herb with several alternate leaves, Flowers large 15 *Stauranthera.*
Shrubs leafy.
Calyx split to base, Flowers small 16 *Rhynchotechum.*
Calyx tubular shortly lobed, Flowers large 17 *Cyrtandromœa.*

III. Fruit a sausage shaped berry.
Stamens 2 18 *Cyrtandra.*

Æschynanthus, Jack.

Epiphytes or rock plants, with slender creeping or erect half woody stems, leaves opposite, or whorled fleshy or coriaceous entire, ovate or lanceolate. Flowers large usually showy red yellow or green in axillary or terminal heads, pedicelled. Bracts ovate or lanceolate small. Calyx tubular or campanulate sub-entire or more or less lobed, or sepals free to the base. Corolla tubular curved, dilated above shortly 2 lipped, upper lip of 2 lobes erect lower of 3 lobes deflexed. Stamens 4 perfect didynamous usually exsert, anthers connivent in pairs, loculi oblong parallel, ovary superior, with a short cup-shaped disc at the base. Style as long as stamens or shorter. Stigma dilate, or peltate. Capsule long cylindric base usually empty and narrower, (gynophore) 2 valved loculicidally. Seeds innumerable minute oblong rugose with one or more hyaline scabrid hairs from near the hilum, and one from the apex.

Species 64 India, Malaya and Hongkong. Chiefly Malayan.

Polytrichium, seeds with a plume of hairs at one end, a single hair at the other.

Calyx tube very short	*1*	Æ. *Motleyi*
Sepals free to base	*2*	Æ. *marmorata*

Haplotrichium, seeds with a single hair at each end

Calyx deeply cut into lobes.		
Leaves in whorls	*3*	Æ. *speciosa*
Leaves in pairs.		
Corolla tube long 2-3 inches		
Sepals hairy	*4*	Æ. *longiflora*
Sepals glabrous	*5*	Æ. *Perakensis*
Corolla tube short thick under an inch	*6*	Æ. *Hildebrandtii*
Erect woody epiphytes		
Calyx tubular, lobes short,	*7*	Æ. *Rhododendron*
Calyx tubular lobes long acute	*8*	Æ. *longicalyx*
Creeping epiphytes, flowers axillary or terminal		
Leaves glabrous	*9*	Æ. *Lobbiana*
Leaves pubescent	*10*	Æ. *radicans*
Calyx cup-shaped small green	*11*	Æ. *Wallichii*
Calyx widely campanulate red	*12*	Æ. *obconica*

1. Æ. *Motleyi*, Clarke, Dec. Prodr. Ser. II. 5. p. 20. Epiphytic erect or branches pendulous about 12-18 inches long woody. Leaves opposite lanceolate or ovate lanceolate acute edges undulate or not, fleshy, light green above, pink beneath; 3-4 inches long, $\frac{1}{2}$-$1\frac{1}{2}$ inch wide, petiole $\frac{1}{4}$ inch long. Flowers solitary or few, axillary pendulous, pedicel $\frac{1}{4}$ inch long or less. Calyx tube short $\frac{1}{8}$ inch lobes linear $\frac{3}{4}$-1 inch long glabrous blackish red. Corolla $\frac{3}{4}$-$1\frac{1}{4}$ inch long dilated upwards, lobes rounded sparingly hairy, base of tube dilate, light green, tips of petals dark purple brown. Stamens brown, filaments glabrous. Ovary oblong with 5 glandular patches at the base. Style very short cylindric, stigma capitate. Capsule cylindric narrowed at the tip 9-13 inches long, seed $\frac{1}{16}$ inch long oblong blunt pustular, plume $\frac{1}{2}$ inch long.

Singapore Chanchu Kang (Ridley 6244), Kranji. Johor, Batu Pahat. Pahang, Pulau Manis, Pahang River, (Ridley 2151). Perak, Larut Hills, Kurau (Wray 245); Batang Padang (Wray 1475), Kinta at Goping (King's Coll. 4463).

Distrib. Borneo, Sumatra, Ceram.

2. Æ. *marmorata*, T. Moore, Pax and Fl. Gard. iii. (1852-1853) p. 56.

Epiphyte with erect woody stems about 12 inches tall. Leaves fleshy lanceolate acute narrowed at the base 2-3 inches long $\frac{1}{2}$ inch wide, above light green with lighter variegations, beneath dull green with transverse purple bars, petiole $\frac{1}{4}$ inch long. Flowers solitary or few together axillary, pedicels slender, $\frac{1}{4}$ inch long, calyx tube very short (hardly any) lobes linear pubescent, $\frac{3}{8}$ inch long corolla tube little more than an inch long dilated upwards, curved lobes rounded pubescent green with brown bars in the mouth. Stamens $1\frac{1}{2}$ inch long, filaments hairy. Style hairy, stigma bilobed. Capsule 6 inches long, rather thick. Seed oblong pustular, plume $\frac{1}{2}$ inch long.

N. E. Brown, Gard. Chron. 18, 1882, p. 787, Clarke lc 38.

Æ. Zebrina, Van Houtte, Cat. 1851.

Penang Government Hill (Curtis 2142, 1700); Lankawi Islands, Gunong Raya (Curtis 2142).

Distrib. Mergui, Siam.

3. Æ. speciosa, Hook fil. Bot. Mag. t. 4320.

Shrubby with erect rather stout stems 12 inches tall. Leaves fleshy lanceolate acute whorled 4 or 5 to a whorl, edges smooth or undulate 3-6 inches long $\frac{3}{4}$-$1\frac{3}{4}$ inch wide petiole $\frac{1}{8}$-$\frac{1}{4}$ inch long. Flowers subterminal clustered 10 or more together large and showy. Bracts lanceolate linear hairy $\frac{1}{4}$ inch long. Pedicels slender $\frac{1}{2}$ inch long. Calyx lobes linear free to base pubescent $\frac{1}{2}$ inch long. Corolla tube 3 inches long narrow cylindric at base filled and curved at upper part, lobes rounded, all pubescent. Stamens $\frac{1}{2}$ inch longer, filaments slender slightly pubescent. Style stout pubescent.

Paxt. Mag. 14, 199. Fl. des Serres Ser. 1 t. 267. Miq. Fl. Ind. Bat. 2718. Clarke lc p. 33.

Perak, Bruseh near Bidor (W. G. Napier); Selangor Bukit Hitam (Kelsall); Tomoh, (Machado).

Distrib. Java, Borneo.

4. Æ. *longiflora*, De C. Prodr. IX. p. 262.

Stem erect woody over a foot tall. Leaves in distant pairs opposite ovate acuminate shortly narrowed to base, fleshy 5 inches long by 2 inches wide, petiole $\frac{1}{2}$ inch long. Flowers several terminal in a cluster, pedicels $\frac{1}{2}$ inch long hairy. Calyx lobes narrowly linear hair $\frac{1}{2}$ inch long, free nearly to the base. Corolla tube 3 inches long base cylindric above dilated scarlet hairy lobes short rounded. Stamens, filaments slender pubescent $\frac{3}{4}$ inch longer than corolla. Style rather stout. Capsule cylindric narrow over 6 inches long.

Hassk. Cat. Hort. Bogor, Ed. 2.154; Hook. Bot. Mag. t. 4328. Vriese Pl. Ind. Bat. Reinwdt. p. 9. Fl. des Serres Ser. 1. t. 288. Paxt. Mag. 15, p. 25. Miq. Fl. Ind Bat. 2 p. 717. Clarke lc p. 32.

Lysionotus longiflora, Bl. Bijdr. p. 766.

Pahang, and trees along the Tahan River rare, (Ridley 2167).

Distrib. Java.

5. Æ. *Perakensis*, Ridl. Journ. Linn. Soc. XXXII. 499.
Shrubby epiphyte, stems about 2 feet long. Leaves coriaceous lanceolate acuminate, 3-7 inches long, 1-2 inches wide, nerves inconspicuous. Flowers in a terminal fascicle, on pedicels nearly half an inch long. Bracts subulate $\frac{1}{8}$ inch long. Sepals linear $\frac{1}{4}$ inch long glabrous, free to the base. Corolla 2-2$\frac{1}{2}$ inches long, tube narrow at the base dilate upwards curved nearly glabrous deep red lobes rounded. Stamens $\frac{3}{4}$ inch longer filaments glabrous or sparingly pubescent. Fruit over a foot long. Seed narrowly oblong pustular with a single hair at each end.

Perak, Larut Hills 5500 feet (Ridley, Curtis 11447); Thaiping (King's Coll. 8314), (Kunstler 2337).

Endemic.

6. Æ. *Hildebrandtii* Hemsley, Bot. Mag. t. 7365. Shrubby epiphyte, with the branches about 6 inches long often rooting. Leaves in distant pairs ovate acute with a rounded base, $\frac{1}{2}$ inch long and as wide; fleshy sessile glabrous. Flowers few terminal on the ends of the branches, pedicels $\frac{1}{4}$ inch long. Calyx lobes free to base linear acuminate pubescent $\frac{1}{6}$ inch long. Corolla tube thick curved, little dilated $\frac{3}{4}$ inch long glabrous orange, lobes rounded short red pubescent, stamens shortly exsert hairy. Capsule 6 inches long, base narrowed sterile.

Pahang, K'luang Terbang, Gunong Benom, (Barnes). Perak, Larut Hills alt. 4500 (Ridley).

Distrib. Burma.

7. Æ *Rhododendron*, Ridley, Journ. Linn. Soc. vol. XXXII. p. 500. An erect epiphytic shrub 1-2 feet tall stems woody stout. Leaves opposite in distant pairs fleshy-coriaceous ovate acuminate 2 inches long 1$\frac{1}{2}$ inch wide, nerves inconspicuous, keel prominent. Flowers axillary and terminal several together, pedicels about $\frac{1}{2}$ an inch long, calyx tubular an inch long deep purple with short acute lobes glabrous. Corolla 3 inches long, tube thick dilated above glabrous lobes rounded oblong $\frac{1}{2}$ inch long pubes-

cent, deep red with three black streaks on the lower lobes. Stamens very shortly exsert, little longer than the corolla, pubescent. Capsule cylindric rather stout 4 inches long, base narrowed into a gynophore. Seeds with a single hair at each end; brown scabred.

Perak Larut Hills from 2500-6000 feet elevation (Ridley, Curtis 1311) Scortechini 58. 388. Plus River (Wray) Scortechini 468 b; 58 (King's Coll. 2332).

Endemic.

8. Æ. *longicalyx*, n.sp. Stems woody over a foot long. Leaves ovate acuminate thick fleshy 2-3 nches long 1-1½ inch wide glabrous, keel prominent, nerves obscure. Flowers terminal large, pedicels ½ inch long. Calyx elongate tubular glabrous 1¼ inch long red, with five long thin lanceate acute points ½ inch long. Corolla 3 inches long red with dark blotches in the mouth, glabrous outside, mouth pubescent, lobes rounded. Stamens nearly as long as the corolla, pubescent; style stout pubescent, stigma capitate.

Selangor Semangko Pass, (A. M. Burnmurdoch); Perak (Scortechini 36 a) Gunong Batu Putih (Wray 1636).

Endemic and rare.

8. *Æ. Lobbiana* Hook. Bot. Mag. t 4260.

Climbing epiphyte with slender stems rooting along tree trunks, leaves lanceolate or ovate lanceolate 1½ 2 inches long, ¼-¾ inch wide, glabrous shortly petioled, in pairs coreacious. Flowers in axillary and terminal fascicles, 3 to 5 together, pedicels slender ¾ inch long or less. Calyx tubular 1 inch long with very short lobes dark purple, thickly pubescent. Corolla tube 2 inches long thick curved lobes broad rounded, thickly pubescent deep red. Stamens barely exserted. Capsule 13 inches long cylindric on a gynophore. Seed very small oblong pustular with a hyaline mass at the hilum and a single long white hair at each end.

Fl. des Serres ser. 1, t. 246, Miq. Fl. Ind. Bat. 2,271 Clarke l.c. 44.

Singapore, Sungei Tengeh (Ridley 2710) Kranji (2706); Johor, Batu Pahat (Ridley), Gunong Pulai (King), Jambu Larang (Fielding); Malacca (Maingay), Mt. Ophir, Ayer Panas (Ridley 1572); Selangor, Pahang Track; Pahang, Pekan (Ridley), Kuantan (Durnford); Perak, Larut Hills to 5000 feet alt. (Curtis); (Scortechini 36 *a* 330 *b*,) Gunong Batu Putih; Sungei Ryah (Scortechini 39); Caulfields Hill (Scortechini 352) (Wray 873); Penang, Government Hill (Curtis); Kedah, Gunong Jerai, (Ridley 5513); Lankawi, Gunong Raya (Curtis 2503).

Distrib. Sumatra, Borneo and Java.

Common in mangrove swamps and forests. The leaves vary a good deal, those of mountain forms being fleshier smaller and more ovate than those of lower levels.

10. Æ. radicans, Jack, Trans. Linn. Soc. 14, p. 43: Calc. Journ. Nat. Hist. 4, p. 62.

Epiphytic or rupestrial, stems creeping and rooting at the nodes, hairy, several feet long. Leaves ovate obtuse, base broad, shortly petioled hairy $\frac{1}{2}$-1$\frac{1}{4}$ inch long, $\frac{1}{2}$-$\frac{3}{4}$ inch wide. Flowers axillary 1-2 together, pedicel $\frac{1}{2}$ inch long. Calyx tubular hairy deep red, lobes obtuse or subacute $\frac{3}{4}$ inch long. Corolla thick curved and hairy red, lobes subacute glabrescent within. Stamens hardly exsert, filaments glabrous. Capsule pubescent cylindric acuminate slender 10 inches long.

Spreng. Syst. 2,838; R. Br. Benn. Pl. Jav. Rar. p. 115; Ann. Sc. Nat. 2, vol. 13, p. 160; De Vriese Pl. Ind. Bat. Review p. 10; Miq. Fl. Ind. Bat. 2,720; Clarke l.c. p. 41.

Trichosporum radicans, Nees, Flora 1825, p. 144, Bl. Bijdr. p. 764.

Singapore, Bukit Timah (Ridley 2704), Kranji; Pahang, Tahan river (Ridley); Malacca, (Griffith, Cuming 2387); Sungei Rambai (Derry t 205), Sungei Buluh; Sungei Ujong

(Cantley); Perak, Bujong Malacca (Ridley), Sungei Rayah (Scortechini 37), Tringganu, Bundi (Rostado).

Var. *lanuginosa*, calyx "green," densely white woolly as is the outside of the corolla tube; Perak (Scortechini 330*b*).

Distrib. Borneo, Sumatra.

On rocks and trees. Native name "Akar Burunas." The leaves used for poulticing for headaches.

11. Æ. *Wallichii*, R. Br. Benn. Pl. Jav. Rar., p. 116, Ann. Sc. Nat. 2, XIII, p. 160.

Stems rather slender woody glabrous. Leaves lanceolate or elliptic, acuminate narrowed at the base into the petiole 3 inches long. 1-1¼ inch wide, glabrous, petiole ¼ inch. Flowers few together subterminal pedicel ¼ inch long slender. Calyx small cup shaped green ¼ inch long, hairy almost entire. Corolla ¾ inch long, tube stout lobes rather large rounded red, hairy. Stamens included, filaments glabrous. Capsule 8 inches long narrow terete. Clarke l.c. 48.

Singapore (Wallich 798 A) Bukit Mandai, Chan Chu Kang, Kranji (Ridley); Johor, Tanjong Kopang (Ridley), Ulu Batu Pahat (Kelsall); Malacca, Mt. Ophir (Lobb); Perak, Bujong Malacca (Curtis).

Distrib. Sumatra, Borneo.

12. Æ. *obconica*, Clarke l.c. 50.

Stems about a foot or more long woody glabrous. Leaves in pairs coriaceous glabrous elliptic, oblong or ovate acuminate narrowed at the base into the petiole 1½-3 inches ¾-1½ inch wide, petiole ¼ inch long. Flowers subterminal a few in a cluster, pedicels ¼ inch long, hairy. Calyx obconic wide ¼ inch long hairy, mouth entire deep red. Corolla ½ inch long tube thick and short, lobes rounded, hairy deep red, with yellowish white central bars. Stamens very shortly exsert, filaments nearly glabrous. Capsule 8 inches long cylindric. Hook. fil. Bot. Mag. t. 7336.

Selangor, Klang (Beccari), Kwala Lumpur. Perak, Batu Kuran (Curtis 2990), Larut Hills (Ridley 2905), Blanja (Wray 149), Bujong Malacca (Curtis 3335) (Scortechini 1861); Dindings, Pangkor (Curtis 1338), Relan Tujor (Wray 1772), Gunong Chabang (Scortechini 28), Ulu Bubong (King's Coll. 10179).

Endemic. On trees in dense forest.

2. *Agalmyla*, Bl.

Climbing shrubs with loose bark. Leaves alternate long petioled, herbaceous lanceolate or ovate lanceolate. Flowers showy scarlet in compact axillary cymes. Calyx deeply 5 cleft, lobes narrow acute. Corolla tubular scarlet, ventricose above, two-lipped, lobes ovate obtuse 5, stamens perfect 2, longexsert; filaments slender, anthers connivent, imperfect, stamens 2-3. Disc annular thick. Ovary linear, superior, glabrous. Style as long as stamens or longer. Stigma 2 lipped, capsule linear long 2 valved, loculicidally. Seeds sessile small oblong with a single hair at each end.

Species 3, Malayan.

A. staminea, Bl., Bijdr. p. 767. Stems very long twining hairy at length glabrous. Leaves elliptic oblong, 8 inches long 3-4 wide, acuminate at both ends, light-green, backs strigose, nerves 8-10 pairs; petiole 6-8 inches long hairy. Cymes sub-sessile, pedicels strigose, bracts lanceolate, calyx long, lobes lanceolate acute pubescent, free nearly to base. Corolla 1 inch long curved dilate, scarlet pubescent, lobes short rounded. Stamens exsert for 1 inch glabrous, anthers oblong. Style stout glabrous, or very short. Capsule 14 inches long slender.

R. Br. Benn. Pl. Jav. Rar., p. 116; Ann. Sc. Nat. 2, Vol. XIII, p. 161; Hook Ic. Pl. t. 733; De Vriese, Pl. Ind. Bat. Reinw. 10; Hook., Bot. Mag. t. 5747, Clarke l.c. 56.

Justicia parasitica, Lam. Ill. i, p. 42, *Cyrtandra staminea* Vahl 1, p. 105.

Perak, Larut Hills (Curtis 2042) (Ridley 2916), Scortechini (King's Coll. 6170); Bujong Malacca (Ridley).

Distrib. Java, Sumatra (Forbes 1864). Climbing on trees.

3. *Didissandra.*

Shrublets or herbs with short or tall stems hairy, leaves opposite in remote pairs or crowded at the tip. Flowers solitary on subterminal peduncles or several on short axillary peduncles. Bracts small usually narrow, sepals free to the base or nearly so, 5 lanceolate or ovate, corolla blue white pink or yellow, narrowly tubular dilated upwards, occasionally broadly tubular infundibuliform, limb bilobed usually unequally, lobes rounded. Stamens 4 perfect, in two pairs, filaments long slender, anthers ovate or elliptic adhering by their faces, loculi parallel, connective sometimes prolonged into a horn. Disc annular, small. Ovary cylindric sessile, style as long or longer, stigma broad ovate. Capsule cylindric linear elongate, rarely short and thick, sessile splitting along the upper edge not twisted.

Species about 20, Malay peninsula and Sumatra.

Note.—Clarke, in making this genus, included in it several very different sections. I would exclude of these all the species with a short campanulate corolla and short filaments such as his section *Stilpnothrix*, and reserving his section *cyrtandroides* and § *speciosae*. Of this latter, apparently confined to the peninsula, no species of the originally described sections belong; they form however a very characteristic group closely allied to some of the *Didymocarpi*.

§ *1. Cyrtandroides.* Tall shrubs with distant nodes, flowers several together in axillary clusters.

Leaves minutely crenulate	1. *D. frutescens*
Leaves entire	2. *D. Johorica*

§ *2. Speciosæ.* Stems woody short, leaves crowded at the top, flowers solitary rarely 2 on subterminal peduncles, bractcate plants with the habit of *Didymocarpi* of the section *Heterobæa.*

Leaves entire or obscurely crenulate glabrous above.
  Flowers orange 3. *D. flammea*
  Flowers violet purple
    Corolla tube slender infundibulifom 4. *D. violacea*
    Corolla very broad cylindric 5. *D. atropurpurea*
Leaves serrate or dentate
  Glabrous above
    Sepals linear lanceolate hairy 6. *D. glabrescens*
    Sepals broadly lanceolate glabrous 7. *D. Wrayi*
Leaves hairy above
  Capsule slender cylindric
    Sepals lanceolate acuminate $\frac{1}{4}$ inch 8. *D. hirta*
    9. *D. serratifolia*
    Sepals oblong ovate $\frac{1}{8}$ inch 10. *D. atrocyanea*
  Capsule short and thick 11. *D. latisepala*
Leaves runcinate 12. *D. guercifolia*
Leaves deeply lobed 13. *D. filicina*

1. *D. frutescens*, Clarke, Mon. Phan. p. 67, Pl. 7.

Shrub with woody stems 3-4 feet tall, stems appressed-hairy. Leaves opposite in alternate pairs distant elliptic lanceolate to oblanceolate minutely crenulate apex subacute, narrowed cuneate at the base 7-9 inches long 3-4 inches wide above sprinkled with fine hairs, beneath covered with appressed hairs especially on the nerves and reticulations, nerves about 13 pairs, petiole $1\frac{1}{2}$-3 inches long hairy, cymes axillary sessile with short hairy branches 1 inch long, flowers 1-3 on a branch. Sepals lanceolate narrow red hairy, corolla tube white infundibuliform pubescent lobes rounded. Anthers ovoid filaments curved in the middle. Ovary glabrous, style pilose. Stigma sub-bilobed. Capsule slender cylindric 3 inches long glabrous longitudinally ribbed.

Didymocarpus frutescens, Jack, Mal. Misc. 1, part 2, p. 5; Trans. Linn. Soc. 14, p. 39; Calc. Journ. Nat.

Hist. 4 (1844), p. 58; Br. Benn. Pl. Jav. Rar., p. 119; Ann. Sc. Nat. 2, vol. 13, p. 165; Miq. Fl. Ind. Bat. 2, p. 726.

Henckelia frutescens, Spreng., Syst. Curæ Post. p. 13.

Penang Hill, (Wallich 780) (Curtis 828) (Maingay 1222); Perak, Larut Hills (Wray 1723) Ridley 2912; Tapa (Wray 826), Kinta River (King's Coll. 837); Dindings, Lumut (Ridley 7171); Malacca (Griffith 3856).

Distrib. Sumatra (Jack, in Herb. Deless. fide Clarke but Jack only records it from Penang).

On banks in forests from 300 feet to 2000 alt. local but abundant.

2. *D. Johorica*, n.sp.

Shrubby 2-3 feet tall pustular below hairy above. Leaves alternate below opposite above lanceolate acuminate long cuneate at the base, margins entire 6 inches long 1¼ wide sprinkled with short conic hairs above shortly scabrid hairy beneath, nerves 6-7 pairs ascending. Cymes axillary peduncles slender hairy 1 inch long. Bracts short linear lanceolate. Flowers 3-4 in peduncle. Sepals small linear lanceolate acute hairy, corolla pink. Capsule slender cylindric hispid 1½ inch long.

Johor, Gunong Panti (Ridley 4175).

The flowers of this were unfortunately lost in drying so I am unable to describe it fully. Endemic rare.

3. *D. flammea*, Ridl., Journ. Linn. Soc., XXXII, 503.

Stem about 2 inches long hardly woody pubescent. Leaves oblong obtuse ashy green shining above glabrous, edges and nerves beneath hairy 4 inches long 1¼ wide, petiole short pubescent. Peduncle erect stout 3 inches long purple pubescent. Flowers few pendulous. Sepals narrowly lanceolate acuminate green with purple pairs half an inch long. Corolla base narrow abrupt dilate cylindric orange hairy outside, lobes short rounded, lower ones a little longer, red. Stamens in 2 pairs, filaments slender terete hispid above white anthers globose. Pistil white pubescent straight. Stigma clubbed. Disc ring shaped. capsule short cylindric purple 1½ inch long.

Legeh (Machado).

Endemic rare.

4. D. violacea, n.sp.

Stem woody about 6 inches tall. Leaves tufted at the top, thin oblanceolate subfalcate, narrowed at the base into the petiole, tip acuminate, margins sinuate, entire, glabrous above, petiole and midrib covered with red multicellular hairs. Peduncles numerous erect 2-3 inches long sparingly red hairy. Bracts linear lanceolate narrow ¼ inch long closely appressed to the calyx. Sepals linear lanceolate glabrous ¼ inch long corolla 1½ inch long violet tube rather narrow gradually dilated forwards, sparingly pubescent lobes unequal, lower lip much longer. Stamens 4, the longer pair hardly ¼ longer than the shorter ones; Pistil glabrous rather short. Stigma broad, capsule 1½ inch long moderately thick splitting along the upper edge.

Perak, summit of Gunong Batu Putih alt. 6700 (Wray 383) (Scortechini 389*b*).

Endemic.

Near *D. Wrayi*, but flowers smaller.

5. D. atropurpurea, Ridl., l.c. 504. Stem 2 inches long woody, leaves lanceolate or obovate narrowed at the base obscurely crenate bases unequal 4 inches long 1½ inch broad glabrous above, beneath hairy on the raised nerves, petiole 1-1½ inches long. Peduncles erect glabrous purple 2 flowered 2 inches long. Flowers nearly sessile. Bracts 2 ovate ¼ inch long ⅛ inch wide purple, sepals nearly free to the base lanceolate acute ¼ inch long glabrous. corolla 2 inches long ½ inch through narrowed at the base widely dilate above deep purple lobes short rounded, lower ones longer. Stamens in 2 pairs filaments straight anthers oblong appressed, style subequal thick glabrous, stigma clubbed. Capsule 2 inches long, thick narrowed at the tip.

Perak, Hermitage Hill on rocks (Ridley), Gunong Inas (Scortechini 1322).

Endemic. Scortechini's poor specimen is this I think, he says however flowers pale red.

6. *D. glabrescens*, n.sp. Stem woody, leaves elliptic lanceolate or oblanceolate coarsely serrate 4 inches long 1 inch wide, above glabrous, beneath dotted glabrous, except the midribs and nerves red hairy, petiole 1 inch long hairy. Peduncle slender 4-5 inches long hairy, with 1 or 2 lanceolate oblong bracts at the top $\frac{1}{8}$ inch long. Flowers solitary. Sepals linear lanceolate obtuse-hairy $\frac{1}{8}$ inch long. Corolla "mauve," "dark blue" $1\frac{1}{2}$ inch long tube gradually dilated upwards lobes rounded pubescent, anthers subglobose. Style capitate broad. Capsule $1\frac{3}{4}$ inch long cylindric slender.

Perak, Summit of Gunong Batu Putih 6700 feet alt. (Wray 384) (King's Coll. 8055), Kinta (King's Coll. 7191).

Near *D. atrocyanea* but the leaves are nearly glabrous, and narrower with a longer petiole and the peduncle bracteate.

Endemic.

7. *D. Wrayi*. Stem woody bare below, leaves alternate lanceolate oblique acuminate dentate narrowed at the base into the petiole 4-6 inches long, $1\frac{1}{2}$-2 inches wide nerves 16 pairs elevated on both surfaces, glabrous above whitish beneath midrib and nerves below covered with coarse reddish trichomes, petiole $\frac{1}{2}$ inch long covered with rough multicellular trichomes. Peduncles from the upper axils slender one flowered 3-4 inches long covered at the base with red multicellular hairs. Bracts 2 ovate broad appressed to the calyx $\frac{1}{4}$ inch long glabrous, sepals broadly lanceolate obtuse glabrous $\frac{1}{2}$ inch long white, corolla $1\frac{1}{4}$ inch long white pencilled with violet, tube

thick over $\frac{1}{4}$ inch through, pubescent lobes broad rounded, stamens 4 didynamous, anthers rounded, style stout.

Perak, Summit of Gunong Batu Putih (Wray 334, 383) (King's Coll. 8036).

Endemic.

8. *D. hirta.* Stem woody 3 inches long, leaves oblanceolate oblique acuminate serrate, narrowed to the base 4-9 inches long, 2 inches wide sprinkled above with pale multicellular hairs especially long on the marginal teeth, beneath glabrous except on the midrib and nerves, covered with rather long multicellular hairs. Scape 3-4 inches long, hairy with catenulate multicellular hairs, sepals $\frac{1}{4}$ inch long lanceolate acuminate very hairy. Corolla violet with a darker centre, tube 1 inch long broad cylindric sprinkled with multicellular hairs, lobes large rounded $\frac{1}{2}$ inch long glabrous, stamens 2 pairs unequal, stigma capitate.

Perak, Bujong Malacca (Ridley).

Endemic.

9. *D. serratifolia.* Stem woody 4-5 inches tall covered with red hairs above. Leaves opposite oblanceolate acuminate, base long cuneate, doubly serrate 6-8 inches long by 2 inches wide sprinkled with pale multicellular hairs above beneath glabrous except for the red multicellular hairs on the nerves and midrib, nerves about 17 pairs, petiole 1 inch long or less hairy, peduncle slender 4 inches long hairy 1 flowered, sepals lanceolate acuminate $\frac{1}{4}$ inch long recurved at length covered densely with long red multicellular hairs. Corolla $1\frac{1}{2}$ inch long narrowed at the base dilate upwards, tube broad, sparingly hairy, lobes rounded, lower ones longer than the upper one. Stamens in 2 subequal pairs half the length of the tube, filaments attached close to the base sinuate, style stout, stigma capitate, capsule $1\frac{1}{2}$ inch long subcylindric thick $\frac{1}{8}$ through glabrous.

Perak, Bujong Malacca (Ridley 9779).

Endemic.

10. D. atro-cyanea.

Stem woody about 6 inches, leaves crowded at the top oblong or lanceolate oblong inæquilateral at the base strongly serrate (drying black), 4½ inches long nearly 2 inches wide, above sprinkled with conical processes formed by the pushing in of the leaf from the under surface, each bearing a short pale hair, beneath punctate and sprinkled with the mouths of the intrusions, glabrous except for the nerves and reticulations which are covered with rufous hairs, petiole winged to base covered with multicellular hairs. Scape 3 inches long covered with red hairs one flowered. Sepals oblong ovate glabrescent or with red hairs ⅛ inch long. Corolla nearly 2 inches long, base shortly narrowed tube broad cylindric pubescent, lobes short rounded subequal, deep purple mouth almost black, stamens 4, filaments slender. Capsule glabrous cylindric curved 1½ inch long.

Perak (Scortechini 368*b*), Bujong Malacca (Ridley, Curtis 3298).

Endemic.

11. D. latisepala, Ridl. l.c. 503.

Stem short woody, leaves crowded above oblong-oblanceolate, base unequal 7 inches long 2 wide or less crenate-dentate sparingly hispid red and nerves beneath covered with red hairs petiole an inch long. Peduncle 6 inches long hispid. Flowers few sepals ovate ⅛ inch long glabrous, corolla 1 inch long cylindric dilated upwards glabrous, lobes short rounded. Stamens 4, filaments linear, anthers subglobose, pistil glabrous, stigma clubbed. Capsule short thick fusiform ½ inch long.

Legeh (Machado.)

Endemic.

12. D. quercifolia, Ridl. l.c. 504.

Stem woody hairy, 6 inches long or less, leaves crowded above lanceolate runcinate, base narrowed deep green glabrous above, beneath glaucous with keel and nerves covered with brown hairs 6-8 inches long 2 inches wide, petiole 1 inch or less long hairy. Peduncles 6 inches long sparsely hairy, flowers 1-2 large, bracts lanceate broad hispid. Sepals broadly lanceolate obtuse green glabrous. Corolla 2 inches long dilated cylindric from a narrow base lemon yellow glabrous, lobes short rounded. Pistil cylindric, stigma clubbed capsule 3 inches long glabrous cylindric.

Perak, Larut Hills, (Scortechini 292-300 (Curtis 2041) Ridley 2910); Bukit Rengas (Fox H. B. S. 10683.)

Endemic.

13. D. filicina.

Stem woody pale rather slender 6 inches long. Leaves tufted at the top lanceolate deeply lobed with oblong rounded lobes about 13 on each side 3-5 inches long 1 inch wide glabrous above, paler beneath with red appressed hairs on the midrib, petiole $\frac{1}{2}$ inch long with red appressed hairs. Peduncle slender red hairy $1\frac{1}{2}$ inch long 1 flowered. Bracts small ovate $\frac{1}{16}$ inch long. Pedicel $\frac{1}{4}$ inch long. Sepals elliptic rounded dark red sparingly hairy $\frac{1}{8}$ inch long. Corolla $1\frac{1}{2}$ inch long base narrow dilated upwards trumpet shaped sparingly pubescent at the base purple paler beneath outside throat, inside dark purple with 6 white lines down the base inside in the tube, lower lip longer than the upper one lobes rounded. Stamens 4 in two pairs, the connective prolonged into a triangular horizontal horn. Disc annular capsule sub-follicular $1\frac{1}{2}$ inch long glabrous.

Perak, Gunong Chabang (Scortechini 14) on rocks overhanging a creek.

Endemic.

4. Didymocarpus.

Herbs or usually small shrubs, stems simple or branched, erect or prostrate. Leaves opposite or the alternate ones reduced, seldom wanting, ovate or lanceolate herbaceous, usually pubescent or hairy, petioled. Peduncles axillary, bearing one or more flowers in a cyme. Sepals free to the base or nearly so, 5 short. Corolla infundibuliform bilabiate, lobes equal or the lower ones longer than the upper. Stamens 2 complete, filaments filiform, rising from about half way down the tube, anthers reniform connivent by the edges. Staminodes 2 short hooked, ovary cylindric passing into the style. Stigma capitate or ovate entire. Disc annular or absent. Capsule cylindric narrow usually splitting along the upper edge. Seeds numerous minute ellipsoid not plumed.

Species about 100. Distribution, India and Malaya.

1. *Elatae.*

Stem tall branched, shrubby. Leaves in distant pairs opposite unequal.		
Bract one cup-shaped appressed together, corolla lips,	1	*D. corchorifolia*
Stem long and weak. Bracts 2 ovate	2	*D. sulphurea*
Stem weak. Bracts ovate amplexicaul Flowers yellow.	3	*D. citrina*
Bracts oblong glabrous. Flowers claret color	4	*D. purpurea*

2. *Didymanthus.*

Stem erect herbaceous, leaves in distant pairs. Flowers very small $\frac{1}{4}$inch long axillary. Flowers medium size	5	*D. parviflora*
Flowers yellow.		
Leaves lanceolate acute	6	*D. flava*
Leaves ovate acuminate	7	*D. ramosa*
Leaves unequal narrowly lanceolate	8	*D. flavescens*
Flowers white.		
Leaves opposite equal hairy or pubescent ovate edges pubescent	9	*D. hispidula*
Edges conspicuously red hairy	10	*D. hirta*
Leaves lanceolate thinly pubescent	11	*D. viscida*
Leaves subglabrous equal longpetioled	12	*D. albina*

Leaves glabrous unequal
Flowers solitary on short peduncles 13 *D. alternans*
Flowers in pairs on long peduncles from upper axils 14 *D. glabrata*
Stem erect herbaceous little branched.
Flowers yellow, corolla cylindric trumpet-shaped.
Leaves petioled silky in distant pairs.
Corolla 2 inches long 15 *D. malayana*
Corolla 1 inch long 16 *D. albomarginata*
Leaves crowded above hairy.
Flowers small congested 17 *D. flavobrunnea*
Stem woody short. Leaves glabrous congested at the top not petioled 18 *D. longipes*
Stem woody. Leaves alternate lanceolate inæquilateral Flowers blue 19 *D. inæqualis*
Stem woody. Leaves crowded or distant elliptic petioled. Flowers small white 20 *D. alba*

3. *Reptantes.*

Prostrate or creeping herbs. Leaves in distant pairs equal or unequal hairy or pubescent.
Flowers blue or white. Leaves hairy rarely glabrous.
Flower in uppermost axil peduncle short 21 *D. reptans*
Leaves velvety elliptic. Flowers solitary terminal 22 *D. ophirensis*
Flowers numerous on slender pedicels 23 *D. pulchella*
Flowers orange or yellow. Sepals hairy 24 *D. crocea*
Sepals narrower subglabrous 25 *D. ascendens*

4. *Heteroboea.*

Stems woody usually short with the leaves crowded towards the top, more or less hairy above, and little or not branched. Leaves hairy silky or rarely glabrous lanceolate serrate narrowed at the base into a winged petiole, alternate. Peduncles slender axillary in the upper axils, one rarely 2 flowered. Bracts usually small solitary linear. Corolla large showy white, crimson or blue rarely yellow, filaments long slender. Capsule narrow cylindric.

Flowers solitary, bracts very small.
Leaves glabrous wrinkled 26 *D. rugosa.*
Leaves tessellate not wrinkled glabrous or with scattered hairs with swollen bases obovate. Capsule over 2 inches long 27 *D. platypus*
Capsule shorter 1 inch long 28 *D. kompsoboea*
Leaves not tessellate hairy or pubescent
Leaves broad covered with close short hairs.
Flowers white tipped crimson 29 *D. quinquevulnera*
Flowers deep crimson 30 *D. atrosanguinea.*
Leaves narrow lanceolate hairy distant
Stem branched flowers yellow 31 *D. hirsuta*
Leaves silky pubescent on both surfaces 32 *D. bombycina*
Leaves crowded thickly appressed hairy.
Flowers white or blue 33 *D. crinita*
Leaves crowded covered with short scattered hairs above; deep green with central white bar.
Flowers white 34 *D. fasciata*
Flowers in pairs on a long peduncle.
Bracts very broad 35 *D. venusta*

5. *Salicinæ.*

Small shrubby plants with narrow leaves crowded at the top. Flowers small.
Leaves entire 36 *D. densifolia*
Leaves serrate. Flowers $\frac{1}{8}$ inch long 37 *D. salicina*
,, ,, Flowers $\frac{3}{4}$ inch long 38 *D. serrata*
Leaves deeply cut pinnate 39 *D. pectinata*

6. *Acaules.*

Stemless or nearly so. Leaves crowded.
Flowers panicled, lips very unequal 40 *D. violacea*
Flowers 1-2 racemose. Flowers large blue 41 *D. lacunosa*
Flowers small. Leaves elliptic peltate 42 *D. perdita*
Leaves obovate crenulate, capsule very short and broad 43 *D. puncticulata*
Capsule linear narrow 44 *D. heterophylla*
Leaves small entire silky 45 *D. pumila*

Affinity doubtful.
Stem tall. Leaves alternate distant
Panicles small adnate to petioles 46 *D. lilacina*

§ *1. Elatae.*

1. *D. corchorifolia*, R. Br. Benn. Pl. Jav. Rar. p. 119. Ann. Sc. Nat. 2, Vol. 13, p. 164.

A shrub from 4 to 6 feet tall much branched with a stout woody stem. Leaves opposite but unequal ovate subacute inæquilateral, base rounded serrate 3-5 inches long $1\frac{1}{2}$-2 inches wide covered with soft short felted hair on both sides, but most on the back, petiole 1-3 inches. Panicles lax axillary 2-3 inches long, peduncles short pubescent. Flowers numerous. Bracts cup-shaped. Calyx entire cup-shaped $\frac{1}{4}$ inch long 5-toothed. Corolla $\frac{3}{4}$ inch long white apple-green in the throat, or often purplish white, tube straight thick, lobes rounded, upper lip recurved, base appressed to the broad decurved lower lip which is much longer. Capsule cylindric, one inch long pubescent splitting to near the tip. Clarke Mon. Phan. 85., Ridl. Journ. Bot. 1890, p. 68.

Selangor, Pahang Track (Ridley 8553); Perak, Bujong Malacca, Ridley 9775, (Curtis 3130), (King's Coll. 10, 979 & 10, 998), Kinta (Kings' Coll. 7220); Penang (Wallich 792) Government Hill (Curtis 1239), Maingay 1227.

Endemic on rocks. This is the biggest species of *Didymocarpus* and the most woody one known to me. It is also peculiar in having the two lips of the corolla mouth pressed together, quite like those of a snapdragon (*Antirrhinum*).

2. D. sulphurea, n. sp.

A shrubby creeper 6 to 10 feet long. Stem pubescent branched with long internodes. Leaves opposite but very unequal, one 3 inches long by $\frac{3}{4}$-1 inch wide, the opposite one $\frac{1}{2}$-$\frac{3}{4}$ inch long $\frac{1}{6}$-$\frac{1}{4}$ inch wide ovate or lanceolate acute base unequal cuneate margins crenulate dentate, deep green above purple beneath, nerves 6-7 pairs elevated on both surfaces, sprinkled all over on both surfaces with short hairs, more hairy on the back. Peduncles axillary filiform 4-6 inches long pubescent, branches at the top two or 3 each bearing as many flowers. Bracts 2 to each pair of flowers ovate glabrous $\frac{1}{8}$ inch long. Sepals elliptic ovate obtuse glabrous. Corolla infundibuliform $\frac{1}{2}$ inch long glabrous, upper lip short recurved lower one longer. Stamens exsert shortly, filaments thick pubescent. Style stout. Stigma excavate at the top. Capsule 1$\frac{1}{2}$-3 inches long rather thick cylindric acuminate, glabrous.

Perak, Larut Hills, Gunong Hijau (Scortechini 6*a*) also on Chabang and G. Bubu, Gunong Batu Putih (King's Coll. 8059) Wray 219, Bujong Malacca (Ridley 9774).

Var. *breviflora*, bracts and sepals narrower acute pubescent.

Corolla smaller $\frac{1}{4}$ inch long. Capsule pubescent $\frac{3}{4}$ inch long.

Selangor, Bukit Kutu (Ridley 7582). Endemic.

*3. **D. citrina***, Ridl., Journ. Linn. Soc., XXXII, 508.

A soft weak herb about a foot tall pubescent. Leaves soft ovate or ovate lanceolate crenulate velvety, opposite but unequal largest 2-3 inches long 1$\frac{1}{4}$ inch wide, petioles $\frac{1}{2}$-3 inches long. Panicles axillary 3 inches long base pubescent above glabrous hairy. Pedicels ½-1 inch long terete glabrous. Bracts cordate ovate acute nearly amplexicaul polished green with red edges. Sepals traingular spreading stiff green, edges red. Corolla lemon yellow pendulous, tube an inch long funnel shaped, base narrowed, mouth dilate ½ inch across, upper lobes broad rounded recurved, lower ones larger. Stamens 2, filament short sinuate, pubescent, anthers subtriangular. Ovary and style ½ inch long pubescent. Stigma peltate. Disc cylindric. Capsule an inch long angled glabrous.

Kedah, Gunong Jerai at 2,000 feet alt. (Ridley 5518).

Endemic.

4. *D. purpurea*, Ridl., Journ. Linn. Soc., XXXII, 508.

Stem herbaceous 12-18 inches tall. Leaves ovate crenulate acute inæquilateral velvety 4 inches long 2 inches wide petiole ¼ to ½ inch long. Peduncle erect subterminal glabrous 3 inches tall. Panicle erect 4 inches long with slender branches. Bracts small ovate. Calyx lobes spreading oblong glabrous short. Corolla tubular with a tube narrowed at the base, dilated upwards, purple, lobes rounded, lower ones longer. Stamens 2 filaments filiform included. Staminodes filiform. Ovary cylindric. Stigma broad discoid. Capsule ½ inch long glabrous cylindric stipitate.

Lankawi, Gunong Chinchan, 1000-1500 feet alt. (Curtis 2567).

Endemic.

§ 2. *Didymanthus.*

5. *D. parviflora*, n. sp.

A small erect herb about 1 foot tall or less much branched. Stem slender covered with appressed hairs. Leaves opposite equal lanceolate acute 1 inch long ¼ inch wide, above glabrous puncticulate, beneath yellow pustular with short translucent hairs longer and multicellular along the edge keel and nerves, nerves 5 pairs, petiole $\frac{1}{4}$ inch hairy. Flowers solitary axillary on slender hairy peduncles $\frac{1}{4}$ inch long. Sepals linear obtuse pubescent. Corolla $\frac{1}{4}$ inch long yellow pubescent tube broad straight, lobes short broad rounded. Stamens nearly as long as corolla lobes, anthers large white reniform, filaments glabrous. Pistil as long as stamens pubescent. Stigma capitate entire. Capsule slender pubescent.

Negri Sembilan, Gunong Angsi (Ridley) fl. Feb.

Endemic.

6. *D. flava*, Ridl., Journ. Linn. Soc., XXXII, 507.

Stem a foot tall scabrid branched. Leaves lanceolate acute base narrowed denticulate scabrid beneath covered on the nerves with short hairs 3 inches long $1\frac{1}{2}$ inch wide, petiole $\frac{1}{2}$ inch long. Cymes axillary and subterminal on hairy peduncles 1-2 inches long, pedicels $\frac{1}{2}$ inch long. Flowers 4 or 5. Calyx short lobes hispid lanceolate. Corolla glabrescent yellow $\frac{3}{4}$ inch long tube straight dilate upwards lobes short obtuse. Style slender pubescent. Capsule cylindric $1\frac{1}{2}$ inch long hispid.

Perak, Larut Hills (Ridley 2914) (Curtis 2690) (King's Coll. 2151) a small leaved form.

Endemic.

Var. *purpurascens.*

Stems stouter over a foot tall hairy. Leaves opposite equal, obliquely ovate acute, often purple as is the stem.

Perak, Bukit Kapayung, Sungei Siput (Ridley).

7. *D. ramosa*, n. sp.

Stem slender branched, pubescent with appressed hairs over a foot tall. Leaves distant opposite, but one of each pair much smallar, ovate acuminate, thin rounded or slightly narrowed at the base glabrous above, sparingly hairy on the nerves beneath, nerves about 7 pairs 2-3 inches long 1-$\frac{1}{2}$ wide or smaller, petiole $\frac{1}{8}$ inch long. Peduncles slender from the lower axils 1-$1\frac{1}{4}$ inch long, 2 flowered viscid hairy. Sepals lanceolate acuminate viscid hairy $\frac{1}{8}$ inch long. Corolla tube straight hardly dilated $\frac{1}{2}$ inch long greenish yellow, bilabiate, lower lobe longer than upper lobes rounded. Stamens 2 filaments long filiform, anthers oblong. Ovary long cylindric style long slender. Stigma capitate small.

Perak, Gunong Batu Putih (Wray 868).

Endemic.

8. *D. flavescens*, n.sp.

Stems slender over a foot long covered with short appressed hairs. Leaves distant opposite but unequal, lanceolate acuminate at both ends entire sprinkled over on both sides with short scattered hairs 1$\frac{1}{2}$-2 inches long $\frac{1}{2}$ inch wide, petiole $\frac{1}{6}$ inch long, silky hairy. Peduncles slender subterminal 1 inch long pubescent, one flowered. Sepals linear hairy. Corolla yellowish white $\frac{1}{2}$ inch long pubescent tube straight cylindric hardly dilated above, bilabiate lobes short rounded. Stamens 2 filaments filiform. Ovary short cylindric. Style short pubescent stigma capitate.

Selangor, Kwala Kubu (Ridley 7585).

Endemic rare.

9. *D. hispidula*, Ridl., Journ. Linn. Soc., XXXII, 507.

Stem 6-12 inches tall hispid. Leaves opposite equal ovate or lanceolate acute or acuminate at both ends, 3-5 inches long 1-2 inches wide above scabrid beneath, hairy especially on the nerves, petiole 1 inch long. Peduncles 1-3 erect from the upper axils 3 inches long hairy with three or 4 terminal branches, bearing a few flowers. Pedicels hispid half an inch long. Bracts linear $\frac{1}{4}$ inch long. Calyx $\frac{1}{4}$ inch long lobes lanceolate hairy. Corolla glabrous an inch long whide with violet streaks in the lower lip, tube straight funnel shaped upper lobes ovate subacute, lower ones longer. Stamens 2, filaments slender nearly straight filiform. Staminodes short clubbed 2, ovary fusiform pubescent. Style terete. Stigma capitate. Capsule 1$\frac{1}{2}$ inch long straight cylindric.

Perak, Larut Hills 4-6000 feet elevation, (Curtis 2037, 1312) Ridley, King's Coll. Abundant on banks.

Var? *Selangorensis.*

Leaves shorter glabrous above. Sepals longer. Fruit 3 inches long softly velvety.

Selangor, Gunong Semangko (Curtis 3752).

This may be specifically distinct but the specimens are out of flower.

10. *D. hirta*, n.sp.

Stem herbaceous branched about a foot tall, thickly covered with rather long reddish multicellular hairs. Leaves opposite ovate or ovate lanceolate subacute serrulate narrowed at the base 3 inches long 1-1½ inches wide, above rather densely hairy, with multicellular hairs, edge hairy, beneath keel and veins covered with close long pale hairs, petiole ¼ inch long hairy. Peduncles subterminal 2½ inch long very hairy, red. Bract very small linear, Flowers solitary on the peduncles. Sepals linear narrow hairy ⅙ inch long. Corolla absent. Capsule 2 inches long cylindric closely but very shortly hairy. Pistil cylindric. Style long pubescent. Stigma discoid.

Selangor, above the Gap, Semangko Pass (Curtis).

Near *D. hispidula* but much more hairy. I have seen no corollas.

Endemic.

11. *D. viscida*, n.sp.

Stems slender 6 inches or more tall shortly roughly hairy, Leaves opposite lanceolate or ovate lanceolate thin acuminate, base inæquilateral, 3-4 inches long 1-1½ inch wide above sparingly scabrid hairy, beneath hairy on the nerves about 6 pairs, petiole half an inch long roughly hairy. Peduncle subterminal 2 inches long viscid hairy, cyme branches 1 inch long. Calyx lobes very short lanceolate viscid hairy. Corolla little over ½ inch long, tube swollen at base then infundibaliform white, sparingly pubescent. Stamens 2, included, filaments filiform. Style shorter. Capsule slender cylindric acuminate viscid hairy 1 inch long.

Perak, Gunong Keledang (Ridley 9781).

Endemic.

12. *D. albina*, n.sp.

Stem 2-3 feet tall herbaceous appressed hairy. Leaves opposite equal lanceolate or ovate lanceolate acuminate at base and apex, margins shortly serrate 5 inches long by $1\frac{3}{4}$ inch wide glabrous except the midrib on the back covered with appressed hairs petiole appressed hairy $1\frac{1}{2}$ inch long. Peduncle axillary 3 inches long, with a lax few branched terminal panicle 1 inch long. Bracts and bracteoles linear. Sepals lanceolate acuminate $\frac{1}{10}$ inch long. Corolla $\frac{1}{2}$ inch long waxy white slightly pubescent, tube cylindric limb distinctly bilobed. Filaments glabrous, anthers ovate lanceolate. Style and pistil pubescent.

Perak, Gunong Batu Putih (King's Coll. 8070).

This is allied to *D. hispida*, Ridl., but with nearly glabrous leaves more lanceolate and smaller flowers.

Endemic.

13. *D. alternans*, n.sp.

Stem about a foot tall erect not branched scabrid hairy above rather slender. Leaves sub-alternate or opposite lanceolate acuminate base cuneate thin entire ro slightly serrate base inæqualateral 3 inches long by $1\frac{1}{4}$ wide nearly glabrous except the midrib on the back and petiole $\frac{1}{4}$ inch long which are scabrid hairy, opposite leaf reduced to a small ovate blade $\frac{1}{2}$ inch long or wanting. Flowers solitary axillary on short pedicels slender $\frac{1}{8}$-$\frac{1}{4}$ inch long with 2 linear small bracts, all pubescent. Calyx lobes lanceolate acute hairy $\frac{1}{8}$ inch long. Corolla $\frac{1}{2}$ inch long white centre yellow tube narrowed at the base dilate upwards pubescent lobes subequal rounded, lips not very distinct. Stamens 2 filaments filiform included anthers elliptic connate. Staminodes filiform short clubbed. Style fairly long hairy. Stigma capitate. Capsule slender cylindric glabrous 1 inch long.

Perak, Bujong Malacca (Ridley 9777) (Curtis 3133), Larut Hills (Curtis 3133) (King's Coll. 2311).

Endemic, on banks at 2-4000 feet elevation.

In some specimens both the leaves of the pair are fully developed, in others one is reduced to a very small ovate abortive leaf.

14. *D. glabrata*, n.sp.

Slender herb branched over a foot tall, almost glabrous except for a little pubescence on the upper part of the stem and petioles. Leaves opposite subequal or one leaf larger than the other, elliptic or ovate 1½-2 inches long 1 inch wide, or less margins entire apex subacute, base cuneate or rounded oblique nerves 7 pairs, with midrib pubescent petiole slender pubescent ¼ inch longer or less. Peduncles axillary 2 inches long from the upper axils pubescent 2 flowered. Bracts very small linear. Pedicels ¼ inch long pubescent. Sepals narrowly lanceolate ⅛ inch long. Corolla white (not seen). Capsule linear acuminate 1½ inch long pubescent.

Johor, Gunong Panti (King's Coll. 209).

Endemic, allied to *D. alternans*, very glabrous for a *Didymocarpus.*

15. *D. malayana*, Hook fil., Gard. Chron. 1896, vol. II, p. 123, fig. 24. Bot. Mag. t. 7526.

Stem very short to 3 inches long. Leaves ovate obtuse shortly petioled to lanceolate acute long petioled 7 inches long 2¾ inch wide nerves conspicuous, 15 pairs silky hairy. Peduncles stout silky hairy 3-4 inches long scapose with 2 flowers at the top or with 2 erect branches 3 inches long bearing 8 or 9 flowers each. Flowers nodding. Calyx lobes linear obtuse pubescent long. Corolla 2 inches long bright yellow, tube narrowed at the base gibbous inflated above, hairy, lobes rounded subequal. Stamens 2, filaments included filaments curved, glabrous, anthers shield-shaped with 2 projecting horns on each. Staminodes minute tooth like. Ovary hairy conic, disc cylindric. Style long glandular pubescent. Stigma capitate. Capsule cylindric 1-1½ inch long.

Perak, Bujong Malacca (Curtis 3300) (Ridley 9778), Tanjong Malim (Baldwin, Chabong (Scortechini 189); Selangor, Gunong Semangko (Curtis 3300); Bukit Kutu (Ridley 7580).

Endemic, at an altitude of from 1500 to 3000 feet, abundant. A very beautiful plant.

16. *D. albomarginata*, Hemsley, Journ. Bot. XXV (1889) p. 204.

Stem 6-12 inches tall pubescent red. Leaves elliptic or ovate obtuse, with a broad or cuneate base dark green edges and nerves white sparsely hairy above silky beneath nerves about 10 pairs 3-4 inches long 1-1½ inch wide. Peduncles axillary and sub terminal hairy pink 3 inches long racemose or sparingly branched. Calyx lobes lanceolate hairy. Corolla yellow, tube narrow pinkish white dilate upwards, lobes subequal rounded. Stamens 2, filaments thickened at the base curved, anthers reniform with short processes. Staminodes 2 filiform hooked ovary cylindric conic pubescent. Style long. Stigma wider discoid. Capsule cylindric acuminate rather thick, lip upcurved hairy ¾ inch long.

Perak, Larut Hills, 3-5000 feet (Wray) (Curtis 2039, 2991) (Ridley 2908) King's Coll. 1817).

Endemic, closely allied to *D. malayana* and difficult to tell in dried specimens except from the much smaller flowers.

17. *D. flavobrunnea*, Ridley, Trans. Linn. Soc., p. 329.

Stem slender seldom branched densely pubescent 3-4 inches tall. Leaves alternate ovate lanceolate acute base unequal narrowed, serrate 7 inches long 3 inches wide, nerves and midrib beneath covered with shining brown hairs, above sparingly pubescent. Peduncles 8 inches long stiff hispid branched shortly dichotomously above. Branches short crowded. Flowers numerous, small. Bracts lanceolate acuminate $\frac{1}{4}$ inch long hispid. Pedicels short. Sepals linear narrow pubescent. Corolla 1 inch long tube cylindric gradually dilated towards the lips lobes unequal rounded short, tube brownish outside limb yellow with an orange spot in the mouth and some red streaks. Stamens 2, with filiform filaments, ovary elliptic. Capsule 1 inch long, narrowed gradually from the base splitting above nearly to the apex, glabrous.

Pahang, Tahan River woods (Ridley 2163).

Endemic, the fruit crowded at the top of the peduncle radiating in all directions gives this the appearance of one of the *Paraboeas*.

18. *D. longipes*, Clarke. Mon. Phan. p. 87.

Stem woody 2 inches long hairy at the top. Leaves oblanceolate narrowed to the base obscurely serrate glabrous deep green above, hairy on the midrib purple beneath 8 inches long $2\frac{1}{4}$ wide. Peduncles 9-18 inches tall rather stout purple pubescent. Flowers few racemose (occasionally panicled) pendent very shortly pedicelled. Calyx lobes linear acuminate pubescent purple $\frac{1}{8}$ inch. Corolla $1\frac{1}{2}$ inch long pale yellow pubescent tube straight little dilated upwards, lobes upper two short rounded, lower lobes longer oblong. Stamens 2, filaments adnate to tube near the mouth short thick, anthers reniform connate, just included, with 2 short appressed horn like processes of the connective. Ovary elongate conic passing into the terete style. Stigma discoid. Disc cylindric. Capsule $1\frac{1}{4}$ inch long rather thick splitting along the upper sege.

Malacca, Mt. Ophir (Griffith 3854) (Cuming 2385) (Maingay 2723) (Ridley 3179).

On rocks in woody places. Endemic.

This is a very distinct plant from the *malayana* set in its short subterranean stem, and large rosette of glabrous leaves. The flowers however are those of the *malayana* group and the anthers have the short connective horn on one side which seems almost peculiar to these.

19 *D. inæqualis*, Ridley, Journ. Linn. Soc., XXXII, p. 506.

Stem woody 5 inches or more tall $\frac{1}{8}$ inch thick brown-pubescent. Leaves alternate distant lanceolate inaequilateral acute serrate narrowed to the base, velvety above, pubescent beneath 5 inches long $1\frac{1}{2}$ inch wide or smaller, petiole distinct pubescent $\frac{1}{2}$ inch long. Peduncles from the upper axils $1\frac{1}{2}$ inch long pubescent. Flowers crowded pedicellate. Bract linear nearly $\frac{1}{4}$ inch long. Calyx campanulate lobes not free to the base linear, $\frac{1}{8}$ inch long pubescent. Corolla blue 1 inch long tube slender enlarged upwards, lobes short rounded. Filaments long slender. Ovary elongate cylindric. Stigma obconic. Capsule cylindric glabrous $1\frac{1}{2}$ inch long.

Lankawi, Gunong Chinchang (Curtis 2568).

Endemic. A peculiar plant not very closely allied to any other.

20. *D. alba*, n.sp.

Stem woody creeping ascending, hairy pubescent. Leaves crowded towards the top lanceolate scute base 2 inches long $\frac{1}{4}$-$\frac{1}{2}$ inch wide softly densely hairy on both sides, petiole densely hairy $\frac{1}{2}$ inch long. Peduncles short $\frac{1}{2}$ inch or less long one-flowered densely hairy. Calyx lobes free to base linear acuminate long hairy $\frac{1}{8}$ inch long. Corolla quite white $\frac{1}{2}$ inch long base cylindric gradually dilated upwards hairy lobes short rounded, lobes short subequal. Stamens 2 filaments rather short filiform. Staminodes 3 filiform clubbed shorter. Pistil pubescent. Capsule $\frac{3}{4}$ inch long curved acuminate splitting along the upper surface glabrous.

Perak, Bujong Malacca (Curtis 3299).

Var. *major*.

Stems taller over a foot. Leaves more remote and less hairy, peduncles longer, 1 inch in flower, 1¼ long in fruit. Corolla 1 inch long.

Perak, Gunong Bubu (Wray 3905).

Endemic.

§ 3. *Reptantes.*

21. D. reptans, Jack. Malay Misc. 1, p. 2, p. 3 (1820); Trans. Linn. Soc. 14, p. 35.

Stems 6 inches or more long creeping villous. Leaves opposite ovate or elliptic obscurely crenulate blunt narrowed at the base or rounded sprinkled with villous hairs above, more hairy beneath, ¾-3 inches long ½-¾ inch wide, Peduncles slender subterminal one-flowered hairy 1 inch long. Bract very small. Pedicel ¼ inch. Calyx lobes linear villous ⅛ inch long. Corolla ½ inch long, white with purple and yellow streaks in the mouth tube, pubescent trumpet-shaped, lobes rather large rounded. Stamens 2, filaments far included filiform. Staminodes very short. Ovary cylindric. Style slender. Stigma discoid. Capsule 1 inch long slender splitting nearly to the apex, abrid.

Spreng. Syst 2, p. 837; Don. Gen. Syst. 4, p. 659; R. Br; Pl. Jav. Rar. p. 119; Ann. Sc. Nat. 2, vol. 18, p. 164. Miq. Fl. Ind. Bat. 2726; Clarke, Monogr. Phan 17-95.

Penang (Wallich 787) (Maingay 1223) (Lobb 335), Pulau Betong (Curtis 1706).

Var. *monticolo* Ridl., Journ. Linn. Soc, l.c. 511.

More slender and creeping for 1½ feet or more. Shoots covered with rufous hairs. Leaves narrower lanceolate 2-3 inches long ⅜ inch wide, acute narrowed into the petiole. *D. producta*, Clarke, Monog. Phan. V, p. 96.

Selangor, Pahang, Track (Ridley 8561), Ginting Bidai (Ridley 7586); Negri Sembilan, Bukit Tumiang, and Bukit Sulu (Cantley's Coll.); Perak, Gunong Batu Putih

(Wray 9 27 & 480); Dindings, Simpit near Lumut (Ridley 3073) Larut Hills to the top (Curtis 2040 & 2992) (Ridley 2913) (Scortechini 20 & 257 a) a remarkable rufous haired form. Goping (King's Coll. 1099).

Distrib. Sumatra.

The form from the top of the Larut Hills has much narrower more glabrous leaves but the plant is remarkably variable in foliage. It forms often great masses in woods and is quite common in the hilly districts. The type form of the species is a rock plant confined to Penang, but the commonest form is the variety *monticola*. Clarke's *D. producta* was based on one of Horsfield's Sumatran plants in the British Museum. This type seems to me identical with some of the hill forms in the peninsula.

Var. *violascens*.

Stems ascending for a foot or so. Leaves rather remote nearly glabrous above except the edges and midrib densely hairy, more hairy beneath, nerves elevated densely appressed hairy. Flowers purplish white.

Selangor, Rawang (Ridley 7583), Dusun Tua (7584).

22. *D. Ophirensis*, n.sp.

Stem long creeping over a foot long. Leaves opposite somewhat unequal elliptic dark green with white on the nerves 1-3 inches long ½-1 inch wide base rounded, above sprinkled with short hairs, edges entire thickly hairy, beneath paler more hairy, nerves 5-6 pairs densely hairy, petiole ¼ inch long hairy. Peduncles subterminal 1 inch long hairy. Sepals linear ⅛ inch long densely hairy. Corolla ¾ inch long gradually dilate forwards, rather broad at the top, hairy purple and white, upper lip much shorter than lower one. Stamens filiform little shorter than the corolla. Style slender. Stigma capitate. Capsule cylindric hairy 1 inch long.

Malacca, lower part of Mount Ophir (Ridley 3185). I took this at first to be *D. marginata*, Clarke, which was based on a plant collected in Malacca or Luzon by Lobb, but which from description may be a form of the very variable *D. reptans*, and the locality of which is doubtful.

23. D pulchella, n.sp.

Stems slender 3-6 inches long purple covered with appressed hairs. Leaves opposite elliptic obtuse 1-2 inches long dark green above with a central white stripe, dotted with short hairs beneath purple, sprinkled with hairs, the nerves and edges hairy, petiole $\frac{1}{4}$-$\frac{1}{2}$ inch long hairy. Peduncles axillary 1 inch long slender hairy. Bract linear very small. Pedicel $\frac{1}{2}$ inch long slender hairy. Calyx lobes narrowed linear $\frac{1}{8}$ inch hairy. Corolla white, with yellow in the mouth, nearly 1 inch long, tube cylindric hardly dilate sparingly hairy lobes oblong rounded. Stamens 2 fertile, filaments filiform straight, anthers oblong. Ovary slender cylindric pubescent, with style $\frac{3}{8}$ inch long. Capsule narrow cylindric upcurved $1\frac{1}{2}$ inch long pubescent.

Pahang, Kwala Lipis (Machado, H.B.S. 11629).

Endemic.

24. D. crocea, n.sp.

Stems creeping a foot or more long succulent pubescent. Leaves opposite but unequal ovate obtuse 1-3 inches long $\frac{3}{4}$-1 inch wide softly hairy green with white veins, nerves beneath elevated. Petiole $\frac{1}{2}$ inch long or much shorter. Peduncles sub-terminal 1 inch long 1 flowered softly hairy. Bracts 2 short linear. Sepals linear pubescent $\frac{1}{6}$ inch long. Corolla 2 inches long, bilabiate pubescent orange-yellow, tube narrowed at the base dilate gibbous above, lobes rounded darker orange, lower lip longer than upper. Stamens 2 filaments sinuate, anthers with 2 processes each on the back. Staminodes filiform hooked. Style slender. Stigma capitate. Capsule rather thick curved upwards $1\frac{1}{4}$ inch long pubescent.

Perak, Gunong Keledang on banks (Ridley 9776) (Curtis 3301), Sungkei (King's Coll. 3014).

Endemic, local on banks.

25. *D. ascendens*, Ridl., Journ. Linn. Soc., l.c. 512.

Stem creeping ascending branched above, rather slender 4-8 inches tall, branches 2 inches long or more. Leaves crowded above opposite subequal ovate entire subacute narrowed or broad at the base, silky hairy, dark green edges white silky, 1½ inch long ½-1 inch wide, petiole 1 inch long or less. Peduncles very short ½ inch long hairy. Flowers solitary. Sepals linear acuminate silky. Corolla orange yellow 1½ inch long narrow cylindric dilated forwards pubescent, lobes short rounded subequal. Stamens 2 filaments long thick, anthers triangular obtuse. Ovary cylindric pubescent. Style long. Stigma ovate triangular.

Perak, Tapa (Haviland) (Curtis 3106), Goping (King's Coll. 458).

Endemic.

§ 4. *Heteroboaea.*

26. *D. rugosa*, n.sp.

Stem short stout woody 2-3 inches long. Leaves crowded at the top oblong oblanceolate winged to the base dentate rather thick glabrous and strongly bullate wrinkled above, beneath pubescent with midrib and nerves hairy, nerves very numerous and close (about 40 pairs) nervules transverse strongly raised 3 to 5 inches long 1½-2 wide. Peduncles slender 3 inches long hairy ebracteate. Flowers solitary. Sepals short ovate acute. Corolla tube trumpet shaped 1 inch long lower lip longer than the upper, lobes broad, white with yellow central bar. Stamens 2, anthers narrow connective two horned. Staminodes short very slender hooked. Pistil and style very hairy. Stigma broad reniform.

Perak, Hulu Selama (Scortechini 1273); Kelantan, Kwala Lebir (Dr. Gimlette).

Endemic. Remarkable for the strongly wrinkled thick leaves. The transverse nervules are depressed on the upper surface, the tissue between being pushed up in a bullate manner.

27. *D. platypus*, Clarke, Mon. Phan. 94.

Stem woody below pubescent, leafy above 4-22 inches long. Leaves sessile, oblanceolate alternate 8-13 inches long 3 inches wide margins serrate, above sprinkled with multicellular hairs from a swollen base, beneath glabrous except for the elevated nerves and reticulations, densely appressed hairy. Peduncles numerous axillary 1 inch long slender hairy. Bracts 2 short lanceolate hairy. Pedicel one flowered ½ inch long hairy. Sepals ovate obtuse hairy $\frac{1}{10}$ inch long. Corolla from a narrow base dilated forwards 1¼ inch long, sparingly hairy, white with a yellow mouth, lobes broad rounded. Stamens 2 filaments filiform long, anthers reniform, with a process of the connective projecting beyond them. Style long slender. Stigma wide discoid. Capsule cylindric 1½ inch long pubescent.

Singapore, Bukit Timah, Selitar (Ridley); Johor, Ulu Batu Pahat (Kelsall), Gunong Pulai (Ridley 3729); Malacca (Griffith 3825) (Cuming 2359), Ayer Panas (Derry III); Negri Sembilan, Perhentian Tinggi (Ridley 10097), Bukit Temiang (Cantley); Selangor, Klang (Beccari), Kuala Lumpur (Ridley); Perak, Gunong Batu Putih (Wray 934), Goping (King's Coll. 832).

Distrib. Sumatra.

The commonest species in the Peninsula in damp spots in woods in the low country.

Malay Names: — "Poko Julong Rimbah," "Poko Sambuyen."

28. *D. Kompsobaea*, Clarke, Mon. Phan. 92 t. X.

Stem woody 4-5 inches tall. Leaves crowded at the top oblanceolate acute narrowed towards the base 9 inches long 2 inches wide, margins coarsely crenate-dentate, above glabrous when adult with a few multicellular hairs when young, beneath minutely pubescent nerves and reticulations elevated, midrib and main nerves with long brownish appressed hairs. Peduncles 1 flowered 4 inches long hairy. Sepals ovate $\frac{1}{8}$ inch long hairy. Corolla white, with yellow in the throat, tube 1 inch long base narrowed above somewhat abruptly swollen, broad nearly glabrous, lower lip longer than upper one. Stamens 2, filaments filiform, anthers oblong. Capsule $\frac{1}{18}$ inch long, moderately thick pubescent.

Pahang, Tahan River woods (Ridley 2152); Selangor, Bukit Hitam (Kelsall).

Distrib. Borneo.

This is closely allied to *D. platypus* but is distinct in its glabrous upper surface of the leaves shorter and broader flower, broader sepals, and shorter thicker fruit. I believe it is identical with the plant described by Mr. Clarke.

29. *D. quinquevulnera*, Ridl., Trans. Linn. Sec., l.c. 328.

Stem woody 6 to 9 inches tall or less, covered with brown wool. Leaves lanceolate acuminate acute serrate narrowed to the base silky pubescent dark green 6 inches long 2-$2\frac{1}{2}$ inches wide. Peduncles slender rosy white-ciliate. Flowers numerous. Sepals lanceolate acute. Corolla tube slender dilated forwards 3 inches long white, two lipped lobes rounded crimson or violet purple edged with white with yellow streaks in the throat. Stamens rather thick sinuate, white, anthers reniform ovary cylindric pubescent. Stigma cordate. Capsule cylindric acuminate $3\frac{1}{2}$ inches long.

Pahang, Kota Glanggi, Tahan Woods, abundant (Ridley 2154 and 2144); Selangor, Pahang Track 15th mile (Ridley 8559).

Endemic. A most beautiful and floriferous plant, but very impatient of cultivation, often growing in great abundance on banks at low to about 1,500 feet elevation.

30. *D. atrosanguinea*, Ridl. Trans. Linn. Soc., l.c. 328.

Stem woody 6 inches tall, $\frac{1}{4}$ inch thick. Leaves lanceolate acute crenulate denticulate or dentate, base broad 9 inches long, 4 inches wide, deep green velvety pubescent above, glaucescent, pubescent beneath with elevated nerves and nervules. Peduncles 3 inches long pubescent. Bract ovate. Sepals linear acute ¼ inch long pubescent red. Corolla pubescent deep red, yellow in the mouth, tube 2 inches long dilate upwards, lobes subequal ovate obtuse. Stamens 2 filaments sinuous rather thick, anthers semiovate. Style longer than the stamens pubescent. Stigma rounded.

Pahang, Tahan woods (Ridley) and Tringanu.

Endemic in woods.

31. D. hirsuta, n. sp.

Stem woody over a foot long, branched, densely hairy above with long multicellular hairs. Leaves alternate lanceolate acuminate narrowed to the base petioled or hardly so crenate densely hairy on both surfaces, 6 inches long 1½ inch wide, petiole ½ inch long or less. Flowers solitary on the peduncles in the lower and upper axils. Peduncles very slender hairy 1 inch long. Sepals short ovate lanceolate obtuse. Corolla narrow an inch and a half long yellow pubescent. Capsule very narrow cyclindric pubescent 3 inches long.

Perak, Goping (King's Coll. 715), Larut Hills (King's Coll. 2529).

The Larut Hills plant is much less hairy than the one from Goping but appears to be the same. The distant leaves are unique in this section.

32. D. bombycina, n. sp.

Stem branched woody 3 to 4 feet tall above closely silky pubescent. Leaves lanceolate acuminate 4-6 inches long 1 inch across narrowed to the base minutely crenulate densely silky pubescent, on both sides, nerves very numerous and close. Pedicels short 1 inch long slender, silky. Sepals ovate acute small silky. Corolla tube 1 inch long sparingly pubescent, white tinged with pink or blue trumpet shaped.

Perak, Ulu Bubong 4-600 feet alt. (King's Coll. 10587).

Endemic. Near *D. crinita* but very different in appearance, much taller with narrower leaves and soft silky grey pubescence. The flowers are also smaller.

33. D. crinita, Jack, Mal. Misc. 1, 11, p. 1; Linn. Trans. V, 14, p. 33, t. 3, f.2; Calc. Journ. Nat. Hist. 4, p. 53, t. 15, fig. 2.

Stem woody pubescent 6 inches tall. Leaves narrow lanceolate acute, narrowed to the base shortly and closely serrate 6 inches long 1 inch wide dark green above sometimes with a white longitudinal bar covered closely with short velvety hair, beneath purple with longer hair especially on the nerves. Peduncles about 1 inch long villous, pedicels $\frac{1}{4}$ inch. Bracts linear all villous. Sepals narrow lanceolate acute villous $\frac{1}{8}$ inch long. Corolla white or usually pale blue $1\frac{1}{2}$-inch long pubescent tube narrowed at the base dilated forwards lobes large rounded subequal. Stamens filaments filiform curved anthers oblong with short lateral processes. Style and ovary cylindric pubescent. Stigma discoid. Capsule slender cylindric 2-3 inches pubescent.

Spreng. Syst 2, p. 837, R. Br. Benn. Pl. Jav. Rar. p. 118; Ann. Sc. Nat. 2, Vol. 13, p. 164; Hook. Bot. Mag. t. 4554; Miq. Fl. Ind. Bat. 2, 724; Clarke, Monogr. l.c. 93.

Pahang, Raub Track (Machado, H.B.S. 11575), Tahan Woods (Ridley 2169), Sungei Ujong, Bukit Sulu (Cantley); Selangor, Ginting Bidai (Ridley 7577); Perak, Larut Hills (Scortechini 294 and Ridley 2907) (King's Collection 2157), Tapa (Curtis 3781); Penang, West Hill (Curtis 410, Deschamps); Kedah, Gunong Terai (Ridley), Tomoh (Machado); Kelantan, Kwala Lebir (Dr. Gimlette).

Var. *Curtisii.*

Leaves oblanceolate acute serrrate deep green with a silvery central bar, covered with long multicellular hairs from a swollen base on both sides very dense and longer on the back, at the base and on the buds. Scapes 3 inches long hairy slender. Sepals oblong hairy blunt. Corolla 2 inches long blue, tube hairy swollen upwards, lobes unequal one inch across the limb. Stigma broad heart shaped.

Selangor near the Gap (Curtis).

This fine form approaches *D. fasciata* in the form of its leaves and large flowers.

Var. *elongata.*

Stem tall and somewhat branched, leaves scattered narrow and small 3 inches long ½ inch wide hairy. Flowers small an inch long on slender pedicels 3 inches long or less from the lower as well as the upper axils Pale blue.

Perak, Tapah (Curtis 3781).

D. crinita as described here is somewhat variable and possibly some of the forms may be separable specifically.

Woods to 4000 feet elevation. Distribution, Sumatra and Borneo. Malay Name, " Poko Sumbong Merah."

34. *D. fasciatas*, n.sp.

Stem woody 6-8 inches tall, with soft hair in the upper parts. Leaves alternate narrowly lanceolate acuminate 4-8 inches long 1½ inch wide narrowed to base, margins serrulate crenulate above deep velvety malachite green, with a broad central white bar covered with short scattered hairs, back edges and petiole with longer pale silky hairs. Peduncles slender short 1½ inch long hairy. Bract very small linear. Sepals narrow lanceolate very small. Corolla 1½ inch long cylindric trumpet shaped white limb edged violet. Capsule very slender 2 inches long or less glabrous.

Pahang, Tahan River in rocky woods (Ridley 2169) rare ; Kedah, Gunong Jerai (Ridley).

Distrib, Lingga, Batu Gajah (Hullett).

I have been unable to get this in flower in the peninsula, but the Lingga plant seems identical and has a flower. It is allied to a Bornean plant occurring on Mount. Matang which it much resembles.

35. D. venusta, n. sp.

Stem erect woody 12-18 inches tall. Leaves oblong lanceolate subacute crenulate serrate narrowed into the petiole winged to the base 4-6 inches long 1-2 inches wide, nerves elevated on both surfaces, 22 pairs glabrous above, nerves and midrib ferruginous hairy beneath. Peduncles axillary 1 or 2 in an axil 7 inches long hairy. Flowers terminal 2 large white. Bracts 2 oblong cuspidate glabrous ⅜ inch long. Pedicels hairy, lower one ¼ upper one ½ inch long. Calyx lobes free to base linear acuminate pubescent ½ inch long. Corolla pubescent, tube enlarged upwards infundibuliform 1½ inch long pure white with a brown spot on the lower lobes, lobes upper shorter than lower, rounded, lower lip ½ inch long lobes oblong. Stamens included 2 filaments filiform, anthers oblong. Staminodes filiform hooked. Ovary narrow cylindric with style ½ inch long, all pubescent. Stigma large cordate. Capsule terete acuminate splitting along the upper edge glabrous 2-2½ inches long.

Perak, Bujong Malacca (Ridley).

Selangor, Gunong Semangko (Curtis 3751).

Endemic. This beautiful plant hardly belongs to this group. It much more closely resembles a *Didissandra* of the *speciosæ* section but has 2 stamens only.

§ *5. Salicinæ.*

36. D. densifolia, n.sp.

Stem woody 3 inches tall. Leaves numerous crowded alternate, lanceolate acuminate narrowed to the base rather thick in texture entire, nearly glabrous when adult except for a few hairs on the midrib 1½-5 inches long ¼-¾ inch wide. Peduncles hairy slender 3 inches tall, with a few one flowered short branches. Bracts linear oblong. Sepals linear oblong, pubescent. Corolla not seen. Ovary cylindric pubescent. Style pubescent. Stigma small capitate. Capsule cylindric pubescent 1 inch long splitting nearly to the tip.

Johor, Gunong Janeng (Kelsall)

Endemic.

37. *D. salicina*, Ridl., Trans. Linn. Soc. l.c. 329.

A small shrubby plant 3 to 6 inches tall simple or branched glabrous below pubescent above. Leaves numerous crowded above opposite narrrowly lanceolate acuminate glabrous serrate, 3-4 inches long, ½ inch wide, pale green above reddish beneath petiole slender ½ inch long or less. Peduncles numerous crowded in the upper axils very slender glabrous red 2 inches long, branches few divaricate pubescent. Flowers very small ⅛ inch long pink. Sepals very narrow linear pubescent. Corolla campanulate, lobes ovate acute. Stamens 2, filaments short slender, anthers reniform. Style longer than the corolla, glabrous. Stigma small capitate. Capsule cylindric acuminate ¾ inch long.

Pahang, Tahan River (Ridley 2166). Endemic, stream banks in woods.

38. *D. serrata*, n.sp.

Stem woody 6 inches or less long. Leaves numerous lanceolate acute, strongly toothed, teeth ⅛ inch long acute, velvety green above, pale beneath, nerves 40 pairs, 8 inches long 1 inch wide, narrowed at base not petioled glabrous above, midrib with pale hairs beneath. Scape slender hairy 3 inches long. Flowers 4 or 5 nearly sessile. Sepals ovate short hairy. Corolla trumpet-shaped ¾ inch long narrowed at base dilated upwards lower lip longer than upper one, ¼ inch wide 3 lobed, side lobes rounded median longer oblong, white stained with purple outside, yellow in the mouth. Capsule very slender over 1 inch long pubescent pedicelled.

Perak, Larut Hills on rocks in dense forest, below the Tea Gardens, at about 1,000 feet altitude (Ridley).

39. *D. pectinata*, Clarke, Hook. Ic. Pl., t. 2246.

Small shrubby plant, 6 inches or more tall branched or simple. Leaves densely crowded at the top glabrous deeply pinnate 6-7 inches long, lobes 3/8 inch long 1/8 inch wide at the base, blunt. Peduncles from the upper axils several, pubescent 2 inches long. Calyx "dark blue." Corolla white tomentose 1/3 inch long tube cylindric slightly inflated, upper lobe obovate rounded. Stamens 2, filaments curved, anthers oblong. Staminodes absent. Disc tubular. Capsule 1/2-3/4 inch long pale glabrous rather thick curved.

Selangor, Rawang (Ridley 7579), Bukit Hitam (Kelsall, H. B. S. 1981); Perak, limestone rocks 4-800 feet alt. (King's Coll. 10711).

Endemic, local banks of streams and rocks.

D. myricaefolia, n.sp.

Stem woody 4 to 6 inches long. Leaves crowded at the opposite or alternate narrowly oblong or oblong lanceolate, acute, base narrowed, bluntly serrate 3-6 inches long 1/4-3/4 inch wide, above sparingly sprinkled with hairs, midrib more hairy, beneath reddish, midrib and nerves and reticulations hairy, nerves 24 pairs, petiole 3/8 inch long red hairy. Scapes slender 3 inches long hairy 1-4 flowered. Sepals linear hairy 1/8 inch long. Corolla tube cylindric narrow half an inch long. Capsule narrow straight cylindric pubescent 1 inch long.

British North Borneo, Bongaya, Labuk Bay (Ridley).

Allied to *D. salicina* but with very different foliage.

§ 6. *Acaules.*

40. *D. violacea*, Ridl., Journ. Linn. Soc., XXXII, 509.

Rootstock short, erect stem an inch long densely woolly. Leaves numerous very unequal ovate to lanceolate acute oblique toothed, sessile or petioled densely softly hairy 2-8 inches long 1¼ to 2½ inch wide narrowed at the base, petiole as much as 2 inches long. Panicles 2-5 inches long lax, branches slender pubescent. Calyx lobes oblong lanceolate ⅛ inch long glabrous. Corolla tube trumpet-shaped curved ½ inch long violet, upper lobes short recurved lower ones ¼ inch longer. Stamens 2, filaments filiform. Ovary long terete. Style short. Stigma clubbed. Capsule glabrous cylindric ¾ inch long.

Perak, Hermitage Hill at 5000 feet elevation, on rocks in the stream (Ridley 2909).

Endemic. A very curious plant the affinities of which are quite doubtful.

41. D. lacunosa, Hook. fil., Bot. Mag., 7236.

Stemless. Leaves crowded oblong or ovate cordate tomentose petioled crenulate 2-4 inches long 1½-3 inches across above pubescent, beneath rusty tomentose especially on the elevated nerves, petiole 2-4 inches long rusty tomentose. Scapes 4-6 inches long 2 to many flowered simple or 3 or 4 branched at the top branches ½ inch long. Flowers nodding. Corolla an inch long deep violet blue, tube narrow at the base gibbous inflated upwards, lobes short rounded subequal. Stamens included curved swollen near the base narrowed upwards, anthers elliptic not horned. Staminodes filiform ⅓ as long. Pistil linear pubescent gradually narrowed into the style. Stigma very shortly bifid. Capsule 2 inches long linear.

Lankawi, Terutau on damp rocks (Curtis 1655).

Endemic.

42. D. Perdita, n.sp.

Stem creeping woody about 4 inches long. Leaves elliptic obtuse rounded peltate margins crenulate 3 inches long 1½ inch wide above scabrid and sprinkled over with hairs, beneath glabrous except for the midrib and nerves which are hairy with appressed hairs, margin with hairs on the crenulations, petiole 1-2 inches long hairy. Peduncles slender 4 inches long, subterminal hairy. Calyx lobes lanceolate pubescent. Corolla not seen. Capsule half an inch long narrowed suddenly into the style and only splitting as far as the base of the style. Stigma subbilobed large.

Singapore, Selitar very rare (Ridley).

I found two plants of this together in a small ravine near Selitar in 1889, one in fruit. Since then the locality has been destroyed by cultivation and the plant has disappeared and is probably extinct as these plants are very local in their distribution and I have never seen anything like it elsewhere.

43. *D. puncticulata*, Ridl., Journ. Linn. Soc., XXXII, 510.

Almost stemless. Leaves crowded elliptic or obcuneate or nearly oblanceolate, inaequilateral base truncate, crenate puncticulate hispid, 3 inches long $1\frac{1}{2}$ inch wide or smaller, nerves beneath elevated hairy. Peduncles subterminal 3 inches long slender thickening in fruit, hairy. Sepals lanceolate acute $\frac{1}{16}$ inch long hairy. Corolla $\frac{1}{4}$ inch long hairy violet, tube short broad campanulate, lower lip longer than the upper one, lobes oblong obtuse. Stamens very short filaments thick, anthers large conic shield shaped. Style longer pubescent. Capsule $\frac{1}{2}$ inch long thick hispid.

Johor, Gunong Panti (Ridley).

Endemic.

44. *D. heterophylla*, Ridl., Trans. Linn. Soc. l.c. 329.

Stem short with a long woody root, woolly above. Leaves crowded very variable in size obovate oblique or lanceolate, crenulate obtuse, 4 inches long $1\frac{1}{2}$ inch wide or less, above dark green purplish in the centre, glabrous, beneath reddish nerves raised covered with red wool on the back. Peduncles slender hairy 3 inches long, branches short and few. Flowers few small. Sepals linear pubescent $\frac{1}{8}$ inch long. Corolla campanulate $\frac{1}{4}$ inch long violet pubescent. Style longer, pubescent. Capsule cylindric curved acuminate 1 inch long glabrous, splitting for nearly the whole length.

Pahang, Tahan River (Ridley 2170); Johor, Gunong Janeng (Kelsall).

Endemic. This and the two preceding species belong to a set more characteristic of Borneo and the intermediate islands than of the peninsula.

45. *D pumila*, n.sp.

Stem slender woody 1-3 inches long. Leaves crowded at the top elliptic obovate obtuse narrowed at the base and inaequilateral $\frac{1}{2}$-1$\frac{1}{2}$ inch long $\frac{1}{4}$-1 wide above silky pubescent beneath dotted with swollen hair-bases, nerves about 6 pairs elevated hairy with appressed hairs. Peduncles slender erect purple with silky appressed white hairs 2-3 inches tall subterminal. Flowers 1-2 terminal very shortly pedicelled. Bract linear purple. Calyx lobes linear purple pubescent. Corolla $\frac{1}{4}$ inch long with a short broad tube pubescent purplish white hardly bilabiate lobes rounded pinkish white. Stamens 2, filaments slender short filiform. Ovary slender cylindric. Style longer than stamens. Stigma discoid. Capsule $\frac{3}{4}$ inch long terete upcurved splitting along the upper edge minutely pubescent.

Selangor, The Gap—Semangko Pass, alt. 3000 feet (Curtis 3782) (Burn-Murdoch).

Endemic. On mossy banks.

46. *D. lilacina*, Ridl., Trans. Linn. Soc., l.c. p. 330.

Stem 12-15 inches long, entirely leafy brown pubescent. Leaves alternate spreading lanceolate crenate dentate pubescent dark green pubescent, 4 inches long 1 inch wide, petiole 1 inch long. Pedicels numerous rising from the petiole near the leaf blade slender $\frac{1}{4}$ inch long pubescent. Sepals very short lanceolate hispid. Corolla campanulate rosy violet sparingly pubescent, lobes oblong rounded. Stamens 2, filaments thick with slender bases, anthers reniform. Style shorter than the corolla pubescent. Stigma capitate. Capsule $\frac{5}{8}$ inch rather thick cylindric with a short beak.

Pahang, Tahan River (Ridley 2165).

Endemic. Quite unlike any other species of *Didymocarpus* known to me, and it might perhaps be generically distinguished.

5. *Chirita*, Buch-Ham.

Herbs or slender shrubs. Leaves opposite often unequal, or whorled or alternate elliptic or ovate. Peduncles axillary one or more flowered. Bracts free or connate, small or large, calyx 5 lobed with acute lobes, usually large. Corolla infundibuliform or tubular ventricose blue or white, two lipped, lobes rounded. Stamens 2, filaments filiform geniculate, anthers rounded connivent often hairy. Disc annular. Ovary cylindric linear. Style usually long. Stigma ovate or narrow, bifid. Capsule long cylindric.

Species 26. India, China and Malay Islands.

Bracts free.		
Stem tall branched cymes axillary	1.	*C. elata*
Stem 12 inches or less, cymes subterminal.		
Leaves ovate. Corolla $1\frac{1}{2}$ inch long	2.	*C. caliginosa*
Corolla $\frac{3}{4}$ inch long	3.	*C. viola*
Leaves lanceolate alternate	4.	*C. sericea*
Bracts connate		
Tube $\frac{1}{2}$ inch long, limb short	5.	*C. rupestris*
Tube very short, limb ovate	6.	*C. Glasgovii*

1. *Ch. elata*, Ridl., Journ. Linn. Soc., XXXII, 518.

A tall rough herb 2 feet high, stem angled branched. Leaves 3 to 6 inches long $1\frac{1}{2}$-3 inches wide ovate inaequilateral acute toothed, hairy, with elevated nerves hispid, petioles slender 1 inch long, cymes lateral axillary 3 inches long hispid. Sepals lanceolate acuminate hairy $\frac{1}{8}$ inch long. Corolla funnel shaped hairy 1 inch long claret color, lobes short rounded subequal $\frac{1}{2}$ inch across. Stamens 2, filaments slender, anthers oblong. Staminodes short with abortive anthers. Ovary short pubescent. Stigma peltate sub-bilobed. Capsule straight cylindric.

Perak, Larut Hills (Wray 2985) (Curtis 2038) (Ridley 2911).

Endemic. In banks in wood, a species very unlike the rest of the genus, but it is difficult to place it anywhere else.

2. *Ch. caliginosa*, Clarke, Mon. Phan., 122.

A soft herb a foot or more tall often branched. Leave4 opposite ovate acuminate, base broad or cuneate vers inaequilateral, margins entire or slightly toothed $2\frac{1}{2}$-y inches long 1-2 inches wide closely pubescent, petiole $\frac{1}{2}$ inch long. Flowers several axillary, pedicels $\frac{1}{2}$-1 inch long pubescent. Sepals lanceolate acuminate hairy $\frac{1}{2}$ inch long. Corolla $1\frac{1}{2}$ inch long azure blue, tube narrow at the base broadly infundibuliform at the apex pubescent, lobes large rounded $\frac{3}{4}$ inch across the lips. Stamens 2, anthers globose covered with long hairs at base. Style slender pubescent. Stigma bilobed lobes linear. Capsule long 3 inches slender cylindric curved.

Selangor, Kuala Lumpur Caves (Beccari) (Ridley) (Curtis 2359); Perak, Kuala Dipang (Curtis 3109), Batu Kurau (Scortechini 1582).

On limestone rocks local but abundant. A beautiful plant.

Endemic. Beccari's locality is given (l.c.) as Klang like several other limestone rock plants from his collection doubtless obtained at the Kuala Lumpur Caves.

3. *Ch. viola*, Ridl., Journ. Linn. Soc., XXXII, p. 516.

A herb 2 to 10 inches tall pubescent. Leaves ovate acute crenate or serrate or entire very unequal 2-6 inches long 1½-3 inches wide, petiole ⅛ inch long. Cymes shors few-flowered. Flowers small pedicels ½ inch long. Sepalt lanceolate acute hispid nearly ¼ inch long. Corolla ¾ inch long violet, tube narrow at the base thin dilate trumpet-shaped, upper lobes short rounded, lower ones ovate obtuse longer, median one longest elliptic, all violet with darker streaks a patch of yellow glandular hairs in the mouth. Stamens 2 exsert, anthers yellow ovoid with a thickened connective, ciliate at the base, with a black spot on each anther, filaments attached to the mouth of the tube. Ovary pubescent. Stigma obliquely bifid, lobes linear obtuse. Capsule terete acute 1½ inch long minutely pubescent.

Lankawi Islands (Curtis 2570).

Distrib. S. Siam, on limestone rocks.

4. *Ch. sericea*, n.sp.

Herb 3-6 inches tall simple or branched woolly. Leaves alternate, lanceolate acute or acuminate base unequal cuneate 2-3 inches long ½ inch wide, margins entire, both sides densely covered with short silky hairs. Petiole ¼ inch to 1 inch long. Flowers 1-2 axillary pedicels ½ inch or less silky hairy, ebracteolate. Sepals narrow linear acuminate densely silky hairy. Corolla blue rarely white, tube half as long again as sepals, lobes broader unequal oblong all hairy. Style slender glabrous. Stigma bilobed lobes elliptic. Capsule cylindric 1½ inch long, silky hairy.

Perak, Ipoh, limestone rocks (Curtis 3131).

Var. Scortechinii.

Capsule shorter ½ inch long, and thicker ⅛ inch through splitting longitudinally into 2 valves. Corolla tube straight, lobes of lower lip broad.

Perak, (Scortechini 112*b* and 102*b*).

Endemic.

5. *Ch. rupestris*, n.sp.

A herb about 4-10 inches tall, stem simple or branched glabrescent. Leaves opposite or alternate thin ovate obtuse 1-3 inches long ½-2½ inches wide above sprinkled with multicellular hairs. Flowers axillary on a peduncle ½ inch long hairy 1-2 sessile enclosed in a green cupular bilobed bract ½ inch long edges recurved and covered with multicellular hairs. Sepals narrowly lanceolate linear hairy nearly ½ inch long. Corolla tube as long as the bract, hairy blue, little longer than the sepal lobes, rounded. Style and ovary slender hairy. Capsule cylindric slender curved 2½ inches long.

Lankawi on damp rocks (Curtis 2120).

Endemic.

6. *Ch. Glasgovii*, n.sp.

A weak herb one foot tall branched. Leaves ovate obtuse thin, 1-3 inches long ¾-2 inches wide, base rounded, retuse nerves 5 pairs alternate, above sprinkled with multicellular hairs, beneath paler with a few hairs on the nerves otherwise nearly glabrous, petiole slender 1-2 inches long glabrous. Bract convolute bilobed, lobes ovate hairy 1 inch long. Sepals lanceolate acuminate narrow hairy ½ inch long. Corolla tube 1 inch long minutely hairy dark violet. Capsule cylindric curved 3 inches long glabrous.

Perak, Waterloo near Kuala Kangsa (C. Robertson-Glasgow).

Endemic.

Ch. Forbesii, n.sp.

Stem over a foot tall zigzag, internodes 1¼ inch long glabrous. Leaves alternate ovate acuminate 6 inches long 3 inches across base unequal, sprinkled on both sides with sport pale conic multicellular hairs, petiole ½-¾ inch long angled and ribbed. Peduncles axillary on both sides of the stem, slender short ¼-½ inch long hairy bearing 2 or 3 flowers on short pedicels. Bracts ovate hairy not connate ½ inch long caducous. Calyx tubular cylindric ½ inch long shortly lobed with 5 ovate lobes. Corolla white ¾ inch long pubescent. Stigma bifid with ovate lobes. Disc cylindric short. Capsule cylindric 3 inches long. Style short.

Sumatra, side of Lintang river edge of forest (Forbes 2579 and 40). Straggling shrub. Flowers white, alt. 900 feet.

Endemic.

6. *Loxocarpus*, Br.

Herbs scapigerous. Leaves ovate or oblong petiolate pubescent. Flowers 1 or more in a peduncled cyme, blue. Sepals 5 free to base or nearly so. Corolla campanulate small hardly bilabiate, lobes rounded. Stamens 2, filaments short thick sinuate, anthers reniform large. Ovary oblong. Style longer than stamens. Stigma capitate. Capsule follicular conic dehiscing along the upper edge.

Species 7. Malay Peninsula and Borneo.

Flowers 1 or 2	1. *L. semitorta*
Cymes dichatomous many flowered	
Capsule short and broad	2. *L. incana*
Capsule horn shaped	3. *L. caerulea*

1. *L. semitorta*, Ridl.

Stemless. Leaves numerous ovate or oblong obtuse rather thick base broad ½-1 inch long ¼-¾ inch wide above green silky, beneath with thick red woolly raised nerves, petiole 1-2½ inches long thick red woolly. Scapes slender 2-2½ inches long silky. Flowers 1 or 2. Calyx lobes lanceolate hairy ⅛ inch long. Corolla ½ inch long tube broad oblique pale blue with violate streaks in the throat, lobes very short and indistinctly marked. Stamens filaments short curved anthers reniform purple. Style and ovary hairy shorter than corolla, larger than stamens. Capsule ¼ inch long horn shaped acuminate with the persistent style, base swollen.

Didymocarpus semitorta, Clarke, Mon. Phan., p. 99

Malacca, Mt. Ophir. (Griffith 3836) (Maingay 1220) (Ridley 3184) and all collectors.

Endemic. On rocks in the stream, "The Mount Ophir Violet."

2. *L. incana*, R.Br. Benn. Pl. Jav. Rar. 115, 120 Ann. Nat. Sci. 2, Vol. 13, p. 167.

Stemless. Leaves ovate cordate serrulate subacute silky tomentose above and beneath 1-3 inches long $\frac{3}{4}$-$1\frac{1}{2}$ inch wide petiole $\frac{3}{4}$-1 inch long. Peduncles 2-4 inches long above dichotomously branched viscid hairy. Flowers few or numerous. Calyx lobes lanceolate pubescent hairy white tinted green. Corolla tube straight thick upper lobes oblong recurved, lower lobes oblong, blue, filaments straight, pistil conic, style stout. Stigma capitate. Capsule ovoid tip upcurved, hairy.

Miquel, Fl. Ind. Bat. 2, 737, *L. alata*, A. De C., Prodr. 9, p. 277.

Didymocarpus incana, Benth. and Hook, Gen. Pl. 2, 1022; Clarke, Monog. p. 98.

Penang, Govt. Hill, Waterfall (Curtis 297) (Maingay 1228) (Wallich 809, *Loxonia ? alata*); Selangor, Bukit Kutu (Ridley); Perak, Hermitage Hill (Ridley); Bujong Malacca (Ridley 9782). A very small form with remarkably slender peduncles.

Endemic. On rocks.

3. *L. caerulea*, *Didymocarpus caerulea*, Ridl., Journ. Linn. Soc., XXXII, 513.

Stemless or nearly so. Leaves several ovate base cordate serrate inaequilateral long petioled 2-6 inches long $1\frac{1}{2}$-4 inches wide, silky hairy above tomentose beneath, petiole 2-8 inches long pubescent. Peduncles 6-12 inches tall viscid hairy. Cymes compact or branched with 2 or 3 branches, 2 inches long. Flowers numerous. Bracts lanceolate narrow. Sepals lanceolate narrow shorter than the tube. Corolla pubescent 2 lipped $\frac{3}{8}$ inch long as wide, tube short broad campanulate, upper lobes oblong obtuse, lower ones truncate, median one longer, blue with a violet mouth. Stamens exsert, filaments suddenly thickened in the middle sigmoid, anthers connate deep violet. Style slender. Capsule $\frac{3}{8}$-$\frac{1}{2}$ inch long lanceolate acute hornshaped upcurved viscid.

Perak, Larut Hills at 5000 feet alt. (Ridley) (King's Coll. 6990) (Scortechini 1427), Gunong Bubu (Wray 3809); Selangor, Bukit Hitam (Kelsall).

Endemic. On rocks.

7. *Paraboea.*

Herbaceous plants or with a shrubby stem. Leaves usually in a rosette tomentose or hairy. Flowers small white or pink in simple or panicled cymes, peduncle usually long calyx small. Corolla white explanate campanulate with a very short tube, distinctly two lipped or nearly regular, lobes equal oblong or unequal blunt. Stamens 2 fertile, filaments thick short, anthers large 2-celled connivent by the tips. Disc none. Ovary sessile. Style longer than the stamens stout. Stigma small capitate. Capsule straight narrow slender not twisted splitting longitudinally.

Species about 20. Siam-Malaya.

1. Campanulatae. Corolla campanulate.

Panicle large many flowered.
Leaves hairy 1. *P. cordata*
Flowers few 2 or 3 only
Leaves almost or quite glabrous
Leaves elliptic nearly entire 2. *P. campanulata*
Leaves ovate crenate 3. *P. Scortechinii*
Leaves lanceolate linear 4. *P. caerulea*
Flowers very small crowded in a head
few. Leaves pubescent 5. *P. pyroliflora*

2. *Breviflores.* Corolla tube very short.

Cyme compact		
Corolla not 2 lipped, lobes equal		
Leaves ochreous beneath		
Flowers in a simple head	6.	*P. capitata*
Inflorescence branched	7.	*P. ferruginea*
Leaves purple beneath	8.	*P. regularis*
Branches of cyme slender		
Corolla lobes subequal		
Back of leaves ochreous tomentose	9.	*P. polita*
Back of leaves red woolly	10.	*P. vulpina*
Lower lip of corolla longer than upper		
Leaves spathulate coarsely dentate	11.	*P. laxa*
Leaves oblong elliptic crenate	12.	*P. Curtisii*
Leaves yellow beneath	13.	*P. obovata*

1. *P. cordata*, Ridl.

A tall herb 2 feet high stem pubescent. Leaves opposite ovate acuminate inaequilateral at base dentate sparingly hispid above and beneath, nerves 10 pairs hairy beneath 6-7 inches long, 4 inches wide petiole 1 inches long. Peduncles stout 6-8 inches long pubescent bearing a spreading panicle 4-6 inches long. Bracts in pairs at the base of each bifurcation ovate glabrous $\frac{1}{8}$ inch long. Pedicels slender $\frac{1}{2}$ inch long glabrous. Sepals lanceolate free to base glabrous $\frac{1}{8}$ inch long. Corolla campanulate $\frac{1}{2}$ inch long white tinted violet lobes short equal rounded, with 2 rows of glands on each. Stamens 2, filaments short anthers subglobose large. Staminodes minute pistil slender glabrous no disc. Capsule sausage shaped 4 angled $1\frac{1}{2}$ inch long glabrous rather thick splitting on two sides. Seeds minute deep red oblong.

Didymocarpus cordata, Jack, R. Br. Benn. Pl. Jav. Rar. p. 119; Ann. Sc. Nat. 2, Vol. 13, p. 164; Dec. Prodr. 9, p. 265; Miq. Fl. Ind. Bat. 2, p. 726; Clarke, Mon. Phan. l.c. 84, t. IX.

Penang (Wallich 781) (W. Fox) (Curtis 452) (Maingay 1224); Perak, Larut Hills) (Scortechini 296 and 400*a*) (Ridley 2913 and 10682) (King's Coll. 2227, 2331 and 6378).

Common on rocks, alt. 2-6000 feet.

Native name "Bunga Chimba." Endemic.

Var. *debilis*, Ridl., Trans. Linn. Soc., l.c. 514. Rhizome fleshy, stem 6 inches tall pubescent. Leaves thin ovate oblique, base obtuse, apex acute or subacute, margin crenate dentate, sparingly hispid 1½-4 inches long 1-2 inches long. Panicle 4-6 inches long glabrous weak, few branched branches short and thin. Bracts ovate. Flowers smaller.

Kedah, Gunong Jerai (Ridley).

Var. *ophirensis*, Ridl., l.c.c.

Tall and weak. Leaves thin lanceolate subacute or acute narrowed at the base 6 inches long 2 inches wide. Panicle weak glabrous. Bracts lanceolate. Flowers smaller, white. Fruit smaller curved ⅜ inch long.

Malacca, Mount Ophir. On a big cliff in the forest below Padang Batu (Ridley 3183).

2. *P. campanulata*, n.sp.

Stem slender herbaceous a foot tall shortly hairy. Leaves opposite in distant pairs elliptic acute entire or obscurely crenulate, above glabrous except the edge fringed with multicellular hairs beneath, glabrous except the midrib and elevated nerves about 12 pairs scurfily hairy 2½-3½ inches long 1¼ inch wide, petiole scurfy hairy ⅛-⅜ long. Peduncles subterminal 1½ inch long 1 flowered refous hairy. Bracts 2 alternate linear minute. Pedicel ½ inch. Sepals linear hairy ⅛ inch long. Corolla companulate half an inch long apparently white, lobes broad rounded. Stamens 2 very short anthers subglobose. Style slender pubescent. Capsule (unripe) cylindric velvety ¾ inch long including the style.

Selangor. Above the Gap on the road to the Sempang mine 3-4000 feet (Curtis), a single specimen.

A very distinct plant of a weedy habit with solitary flowers of the type of *P. cordifolia.*

3. *P. Scortechinii*, n.sp.

Stem herbaceous glabrous. Leaves opposite ovate acuminate, base rounded inaequilateral, margins crenate, quite glabrous, nerves 8 pairs, 3-3½ inches long 1-2½ inches wide, petiole ½ inch long. Peduncle slender erect subterminal 3 inches long glabrous, branches dichotomous few 1 inch long. Flowers solitary on the ends of the branches. Sepals free almost to the base oblong obtuse ⅛ inch long glabrous, fleshy. Corolla campanulate ½ inch long glabrous lobes rounded. Anthers broad elliptic, filaments very short.

Perak, (Scortechini no number or locality). A single incomplete specimen. The plant is allied to *P. cordifolia* of which it has quite the flowers, but the whole thing is quite glabrous.

4. *P. caerulea*, n.sp.

Stem woody 3-4 inches long ⅛ inch through. Leaves crowded at the top narrowly lanceolate linear acuminate narrowed gradually to the base 4-5 inches long ¼ inch wide above dark green nearly glabrous, midrib prominent, beneath pale dark green nearly glabrous, midrib prominent, beneath pale cinnamon color, nerves about 30 pairs joined at the tips. Peduncles slender axillary 4 inches long pubescent 1-2 flowered. Sepals linear ⅛ inch long obtuse. Corolla campanulate ½ inch long and nearly as wide at the base pubescent, base pale, lobes deep blue, lobes rounded. Stamens 2, filaments very short sigmoid, anthers broad rounded oblong. Style fairly stout. Stigma heart shaped. Capsule very narrow cylindric 1 inch long.

Tringanu, Bundi (E. Rostado). The upper part of the stem among the leaves is covered with silvery hairs.

The habit of this plant is quite that of *Stilpnothrix ornata* (*Didissandra ornata*, Clarke) a native of Borneo, but it has only 2 not 4 stamens. It differs very much in habit from all others of the genus.

5. *P. pyroliflora*, Ridl.

Stem woody 3 inches tall or more, pubescent. Leaves alternate, ovate or ovatelanceolate acuminate at both ends 3-4 inches long 1½ inch wide entire bright green, silky pubescent above, beneath paler, petiole over an inch long pubescent. Peduncles several from the upper axils erect 3-4 inches long shortly hairy. Sepals lanceolate short pubescent. Corolla campanulate funnell shaped white ⅜ inch long lobes short rounded. Stamens 2, filaments short and thick, anthers large elliptic. Style thick curved upwards longer than the corolla. Stigma very small capitate. Capsule spreading an inch long terete, terminated by rather a long style, glabrous.

Didymocarpus pyroliflora, Ridl., Trans. Linn. Soc., p. 330.

Pahang, Tahan river woods (Ridley 2164).

Endemic.

6. *P. capitata*, n.sp.

Stemless, or with a stout rootstock. Leaves in a rosette orbicular base rounded subpeltate 6 inches long 5 inches wide bright green glabrous above ocre yellow beneath tomentose, nerves raised reticulate, petiole stout 2 inches long. Peduncle slender 8 inches tall. Flowers numerous in an umbell at the top, with two broad blunt oblong bracts ¼ inch long, below. Pedicels ½ inch long. Calyx campanulate lobes linear oblong obtuse ⅛ inch long green hairy Corolla ½ inch across lobes subequal rounded, white. Filaments very short straight, anthers reniform. Style curved up longer white. Capsules spreading linear straight beaked 1½ inch long.

Perak, Bujong Malacca (Curtis 3215), Kamuning (Machado) on limestone rocks.

Var. *oblongifolia.* Leaves oblong narrowed at the base.

Perak, Kuala Dipang and Sungei Siput (Curtis 3107), Tambun (Ridley 9832), Batu Kurau (Scortechini 1581 and 4325), Goping (King's Collection 456).

Endemic. The leaves are very variable. In one plant from Sungei Siput the leaves are narrowly lanceolate tapering acutely into the petiole, 9 inches long by 2 inches wide. In some plants the bracts at the base of the cyme are developed into very small leaves of the shape and coloring of the basal leaves.

7. *P. ferruginea*, n.sp.

Stemless or nearly so. Leaves in a rosette ovate cordate obtuse crenulate above covered with scattered hairs, below tomentose with longer hairs paler nerves elevated, 3 inches long 2½ inches wide, petiole 1½-2 inches long. Peduncles 3 inches long ferruginous-tomentose. Cyme compact scorpioid ferruginous-hispid. Calyx lobes as long as the corolla green ferruginous-hispid lanceolate. Corolla tube very short limb explanate not bilabiate lobes broad obovate obtuse subequal and similar, white or tinted with rose. Stamens 2 short, filaments broad spathulate thick, apex three toothed, anthers conic connate by the lips. Style no longer. Ovary conic. Stigma rounded entire discoid.

Lankawi on damp rocks (Curtis 2566).

Endemic.

8. *P. regularis*, Ridl.

Stem woody 1½ inch long. Leaves crowded at the top very unequal oblong lanceolate obtuse base cuneate inaequilateral crenulate dark green glabrous above purple minutely tomentose beneath with elevated nerves 3 inches long 1½ inches wide, petiole 1½ inch long tomentose. Peduncles slender pubescent an inch long, branches very short and slender ¼ inch long umbelled brown tomentose. Bracts lanceolate obtuse. Flowers few very small very shortly pedicelled. Calyx lobes lanceolate brown tomentose as long as the corolla tube. Corolla hardly $\frac{1}{4}$ inch across white lobes oblong obtuse equal not bilabiate. Stamens 2 filaments sigmoid thick, anthers rounded ovaid. Style longer. Stigma capitate. Capsule $\frac{1}{2}$ inch long cylindric scabrid rather thick, straight.

Didymocarpus regularis, Ridl., Journ. Linn. Soc., XXXII, 515.

Lankawi Islands (Curtis).

Endemic.

9. *P. polita*, n.sp.

Stemless. Leaves in a rosette ovate crenate obtuse, base rounded above deep shining green, beneath ocreous tomentose with nerves and nervules reticulate 7-8 inches long 4-4$\frac{1}{2}$ inches wide, petiole 4 inches long. Peduncle over a foot long slender with brown ocreous fur, branches few 3 inches long, umbellate. Bracts linear oblong obtuse brown woolly. Pedicels $\frac{1}{4}$ inch long. Calyx lobes linear green $\frac{1}{8}$ inch long. Corolla subbilobed $\frac{1}{2}$ inch across white back tinted pink, lobes rounded. Stamens, 2, filaments thickened at the base, anther orange reniform. Style stout pink at base white above. Stigma capitate.

Perak, Bujong Malacca (Curtis 3214 part).

Perhaps a hybrid between *P. capitata* and *P. vulpina*.

Endemic.

10. *P. vulpina*, n.sp.

Stem 2 inches long thick covered with red wool. Leaves elliptic rounded at each end crenulate above sprinkled with pale multicellular hairs, beneath covered densely with branched rufous hairs arranged stellately, nerves beneath strongly elevated, 6 pairs, reticulations elevated 1$\frac{1}{2}$-3 inches long 1-2 inches wide, petiole 1-3 inches densely red woolly. Peduncles slender 6-8 inches long red, with a few branched hairs branches slender 1-3 inches long, trichotomous. Bracts very small linear obtuse glabrous. Sepals narrow linear glabrous. Corolla white $\frac{1}{4}$ inch across lobes rounded subequal. Stamens 2 anthers very large reniform. Style short thick. Capsule cylindric narrow glabrous.

Perak, Bujong Malacca (Curtis 3214), Hot Springs Ipoh (Curtis 3132).

Endemic. On limestone rocks.

11. *P. laxa*, n.sp.

Stem very short woody and thickly brown tomentose. Leaves obovate coarsely crenate serrate, narrowed at the base into the winged petiole 3-7 inches long 2-3 inches wide dull green densely hairy tomentose on both surfaces. Peduncle slender 5-6 inches long terminated by a much branched umbel of slender branches 3 inches long. Pedicels slender $\frac{1}{8}$ inch long. Flowers numerous, bracts very small. Calyx shortly 5 cleft, lobes lanceolate short green. Corolla $\frac{1}{4}$ inch across white or tinted rosy, upper lobes broad oblong recurved lower lips shortly trifid central lobe broadest. Filaments short swollen in the middle, anthers yellow reniform. Style longer. Capsule linear cylindric straight $\frac{1}{2}$ inch long tipped with the elongate style.

Lankawi at Kwah (Curtis 2571).

Endemic.

12. *P. Curtisii*, n.sp.

Stemless. Leaves oblong elliptic crenate obtuse 6 inches long $2\frac{1}{2}$ inches wide, above sprinkled with hairs, petiole rufous hairy $1\frac{1}{2}$ inch long. Scapes 10 inches long rufous tomentose bearing an umbel of 4 or 5 branches at the top about 2 inches long. Bracts at base of umbel oblong obtuse $\frac{1}{4}$ inch long. Pedicels short rufous tomentose. Calyx lobes linear oblong obtuse hairy $\frac{1}{8}$ inch long. Corolla $\frac{1}{2}$ inch across white buds tinted pink, tube very short limb bilobed upper lobes short rounded, lower lobes larger. Stamens filaments very short thick curved, anthers reniform triangular. Style much longer than stamens bent, ovary cylindric. Stigma wider discold. Capsule (unripe) cylindric acuminate straight.

Perak, Bujong Malacca (Curtis 3214).

Endemic.

13. *P. obovata*, n.sp.

Stem short. Leaves crowded at the top thin obovate blunt base cuneate 3 inches long 1½ inch wide thinly arachnoid on both surfaces, beneath yellowish, petiole ¼ inch long. Peduncle slender 3-6 inches long glabrous, branches few terminal. Bracts narrowly oblong obtuse. Sepals oblong obtuse glabrous. Corolla ¼ inch across lower lip longer than upper one lobes oblong rounded. Stamens 2, anthers reniform, filaments short and thick. Style short and thick. Stigma capitate.

Lankawi, Gunong Chinchang (Curtis).

One specimen only seen.

8. *Boea*, Comers.

Herbs or shrublets with a woody stem. Leaves opposite or whorled, generally on the back. Peduncles axillary usually elongate, laxly or compactly cymose or panicled. Bracts small. Flowers large or small blue or white. Calyx of 5 narrow sepals. Corolla widely campanulate with a short tube usually distinctly billobed, lobes ovate obtuse.

Stamens 2 perfect with short curved thick filaments, anthers ovoid coherent, cells ovoid. Disc absent ovary sessile. Style as long glabrous above. Stigma smal capitate. Capsule slender cylindric or fusiform cylindric, when ripe spirally twisted. Seeds minute.

Species about 22. India, Siam, China and Malaya. Stems tall leafy, leaves woolly.

Flowers 1½ inch across	1. *B. paniculata*
Flowers under an inch across	
Leaves white beneath	2. *B. verticillata*

Leaves yellow brown beneath	3.	*B. caerulescens*
Stem short white woolly about 6 inches, Peduncle as long	4.	*B. elegans*
Stems short woolly		
Peduncles shorter than leaves	5.	*B. lanata*
Stems short woody, leaves crowded		
at the not top woolly		
Peduncles no longer than leaves	6.	*B. acutifolia*
Peduncle tall slender widely	7.	*B. divaricata*
branched, Stems woody branched		
Peduncles shorter than the leaves	8.	*B. suffruticosa*
Peduncles tall slender, branches umbellate	9.	*B. parviflora*

1. *B. paniculata*, Ridl., Journ. Linn. Soc., XXXII, 519.

Stem base woody 4 inches or more long $\frac{1}{2}$ inch thick, above a rosette of leaves, upper part of stem 1-?feet long stout deeply grooved, white arachnoid, branches numerous whorled erect 6 inches long covered with brown wool. Leaves crowded in a rosette at the top of the woody portion of the stem lanceolate acuminate narrowed for a long distance at the base 6 inches long 1 inch wide above grey arachnoid, beneath greyish white with cinnamon colored raised nerves. Bracts 4 or 5 at each whorl of branches leafy. Flowers numerous pedicels $\frac{1}{2}$ inch long. Sepals short lanceolate pubescent $\frac{1}{8}$ inch long. Corolla tube very short limb $1\frac{1}{2}$ inch wide blue, lobes large rounded unequal. Filaments short and thick $\frac{1}{4}$ inch long. Style curved as long. Capsule $\frac{3}{4}$ inch long thick.

Selangor, limestone rocks, Kuala Lumpur (Kelsall and Ridley 1970, 1976 and 8226); Perak, Sungei Siput (Curtis 3105), Kuala Dipang (King's Coll. 8271), Batu Kurau (Scortechini 1611).

Endemic. A superb plant growing in the cracks of limestone rocks.

2. *B. verticillata*, Ridl., Journn. Linn. Soc., XXXII, 519.

Stem base woody 3 inches or more long nearly ¼ inch in diameter, above herbaceous 1½ feet tall 4 angled white arachnoid with branches whorled each whorl 3 inches or less apart. Leaves whorled lanceolate acuminate narrowed at the base into a petiole, 4 inches long ¾ inch wide or more, above grey arachnoid beneath white arachnoid with raised nerves. Bracts leafy ½-¼ inch long. Flowers numerous blue. Sepals lanceolate subulate arachnoid ⅛ inch long. Corolla half an inch wide lobes rounded. Stamens very short, anthers pear-shaped. Style much longer straight. Capsule fusiform acuminate ½ inch long.

Selangor, limestone rocks at Kuala Lumpur (Kelsall, Ridley 1975, 8551).

Endemic.

3. *B. caerulescens*, n.sp.

Whole plant over 2 feet tall, upper part of stem stout grooved woolly. Leaves oblanceolate subobtuse narrowed to the base above dark green densely pubescent, beneath ochreous covered with felted wool, 6-8 inches long 1¼-2 inches wide, petiole winged to the base or not. Panicle 2 feet or more long large, branches whorled yellow-woolly. Bracts below leaflike above linear narrow yellow. Calyx lobes lanceolate woolly. Corolla tube very short, limb ¾ inch across pale blue upper lobe shorter lobes rounded, lower lip unequally lobed longer, central lobe longest. Stamens 2 anthers reniform conic, large filaments short curved. Style bent on the cylindric ovary pubescent. Stigma large discoid. Capsule thick glabrous ¾ inch long.

Perak, Sungei Siput (Curtis 3137), Kinta (King's Coll. 7175, 7062, 8276).

Endemic.

B. Havilandi, n.sp.

Stem 18 inches tall 4 angled woolly. Leaves in whorls of three about 4 inches apart oblong lanceolate obtuse sessile 8 inches long by 2 inches wide covered with a tomemtum, nerves inconspicuous. Panicles axillary and terminal in threes, about 3 inches long, peduncles woolly. Sepals lanceolate woolly 5. Corolla $\frac{1}{2}$ inch across blue, lobes rounded. Stamens filaments short anthers large semiovoid thick style. Capsule pendulous cylindric 1 inch long $\frac{1}{8}$ inch through.

Borneo, Sarawak, Braang (Dr. Haviland 641), Bau (Ridley 11724) on limestone rocks.

Endemic.

4. B. *elegans*, Ridl., Journ. Linn. Soc., XXXII, p. 522.

Stem about 6 inches long woody decumbent $\frac{1}{8}$ inch thick arachnoid. Leaves whorled in threes $\frac{1}{2}$-3 inches apart, lanceolate acute narrowed to the base 1-2$\frac{1}{2}$ inches long $\frac{1}{4}$-$\frac{1}{2}$ inch wide above grey arachnoid beneath cinnamon arachnoid. Peduncles from the upper axils slender glabrous 6 inches long. Cyme terminal 3 inches long with few slender branches. Calyx very short lobes lanceolate glabrous. Corolla half an inch across, with broad rounded lobes white pink in the mouth, anthers oblong. Style rather short. Stigma clubbed. Capsule 1 inch long glabrous linear acuminate.

Kedah, Gunong Jerai on granite precipices (Ridley).

Endemic. The only species I have met with not growing on limestone rocks.

5. *B. lanata*, Ridl., l.c. 520.

Stem short stout woody 2 inches long, curved with white wool. Leaves crowded lanceolate acuminate narrowed into a petiole arachnoid above densely woolly beneath 3 inches long $\frac{3}{4}$ inch wide, petiole woolly 3 inches long winged to base. Panicles few branched axillary dense an inch to 5 inches long. Calyx as long as the corolla tube, lobes lanceolate woolly outside. Corolla thin $\frac{1}{2}$-$\frac{3}{4}$ inch across glabrous rose-pink, lobes rounded anthers subglobose. Style thick. Capsule $\frac{1}{2}$ inch long thick glabrous.

Lankawi, Dayong Bunting on limestone rocks (Curtis 2569).

6. B. *acutifolia*, Ridl., Journ. Linn. Soc., XXXII, p. 519.

Stem woody 3 inches or more long $\frac{1}{4}$ inch through internodes $\frac{1}{2}$ inch long. Leaves crowded at the top oblanceolate acute, narrowed to the base 6 inches long $1\frac{1}{2}$ inch wide above glabrous dotted beneath cinnamon arachnoid. Panicles axillary 6 inches long, peduncles arachnoid, branches short slender. Sepals 3 lanceolate acute $\frac{1}{8}$ inch long arachnoid. Capsule cylindric acute glabrous $\frac{3}{4}$ inch long.

Lankawi, Goa Chinta (Curtis 2791).

Endemic.

7. *B. divaricata*, n.sp.

Stem about 4 inches tall thick and woody. Leaves in a rosette on the top oblanceolate crenulate obtuse narrowed into a winged petiole, nerves and nervules beneath elevated 15 pairs, above glabrous beneath covered with a thin brownish tomentum 7 inches long $2\frac{1}{2}$ inches wide. Peduncles rather stout terete smooth 7-16 inches tall, branches umbelled decompound, a foot or more long. Pedicels of flowers $\frac{3}{16}$ inch long covered with brown fur. Calyx lobes lanceolate acute green glabrous shorter than the corolla tube. Corolla $\frac{1}{4}$ inch across pale lilac tube short dilated, limb bilabiate, lobes rounded. Stamens anthers connate rounded with acute bases filaments thick sigmoid. Style slender. Stigma horseshoe-shaped. Capsule cylindric strongly twisted 1 inch long.

Lankawi, Ayer Hangat (Curtis 3683).

Endemic.

8. *B. suffruticosa*, Ridl., Journ. Linn. Soc., p. 518.

A branching shrub 1-2 feet tall, with rather slender branches $\frac{1}{8}$ inch through angled slightly arachnoid. Leaves scattered lanceolate subacute narrowed at the base 3 inches long $\frac{1}{2}$ inch wide above nearly glabrous punctate, beneath covered with brownish tomentum, nerves conspicuous, petiole $\frac{1}{4}$-$\frac{1}{2}$ inch long. Panicles axillary dense an inch long with short branches brownish woolly. Buds brown woolly. Calyx longer than the corolla tube. Sepals linear lanceolate thick tomentose outside. Corolla $\frac{1}{4}$-$\frac{1}{3}$ inch across white lobes short oblong rounded, anthers oblong obtuse. Capsule fusiform very thick $\frac{1}{4}$ inch long tipped with the long style.

Lankawi, on a small island north of Kwah (Curtis 3682 and 2565).

Endemic.

9. *B. parviflora*, n.sp.

Stem slender shrubby branching covered with ferruginous tomentum. Leaves lanceolate acuminate, base cuneate unequal 4 inches long 1-1$\frac{1}{4}$ inch wide above glabrous, beneath covered with rusty wool, nerves elevated 11 pairs. Peduncle 6 inches long,slender glabrous, panicle umbellate of 6 slender branches in a terminal whorl, branchlets glabrous numerous slender. Bracts very narrow linear. Flowers very small numerous white, pedicels slender $\frac{1}{8}$ inch. Sepals lenceolate glabrous 5. Corolla very small white, tube very short, lobes upper subacute lower ones oblong, anthers large reniform. Style shorter. Capsule very slender cylindric $\frac{1}{4}$ inch long terminated by the slender style.

Perak, Hot Springs at Ipoh and Sungei Siput, not common (Curtis 3134), Kinta (King's Coll. 7,108).

Endemic. On limestone rocks.

9. *Phylloboea*, Benth.

Herbs or half shrubby. Leaves opposite petioled. Cymes pedunculate many flowered. Bracts large conspicuous. Flowers large pink or blue. Calyx large 2 lipped, one lip 2 lobed, the other 3 lobed or of 3 large connate sepals. Corolla broadly campanulate 2 lipped 3-5 lobed. Stamens 2 short, anthers large rounded. Capsule lanceolate at length twisted.

Species 2, one Burmese, one Malayan.

P. speciosa, Ridl., Journ. Linn. Soc., XXXII, p. 522.

A shrub 1 or 2 feet tall, stems white tomentose. Leaves in distant pairs lanceolate acuminate 6 inches long $1\frac{1}{2}$ inch wide, above glabrous, beneath white arachnoid, petiole 1 inch long. Peduncle stout lateral erect nearly a foot tall. Flowers sessile scattered. Bracts ovate lanceolate $\frac{1}{2}$ inch long white arachnoid. Calyx of three sepals connate ovate oblong woolly $\frac{3}{8}$ inch long. Corolla an inch long blue, tube broad, lobes 3 two oblong truncate, the third much broader. Stamens short not longer than the ovary. Style long woolly. Capsule 1 inch long lanceolate cylindric acuminate woolly.

Lankawi. Common on limestone rocks on the small islands. (Curtis 2564).

Endemic.

10. *Boeica*, Clarke.

Herbs or half shrubby plants with the habit of *Boea*. Leaves oblong elliptic or lanceolate more or less tomentose or hairy. Inflorescence racemose or panicled, axillary. Flowers small lilac or white. Calyx 5 fid. Corolla tube very short, lobes subequal, rounded. Stamens 4, filaments very short, anthers rounded connivent. Style curved larger than the stamens. Capsule linear cylindric.

Species 4 or 5, Assam, Burma and Malay Peninsula.

Most of the few described species are based on flowerless specimens, and are all very similar, and closely resemble *Boea divaricata* in habit but the capsule is straight and not twisted. The type species however (*B. filiformis* Clarke) has 4 stamens instead of two.

The Malayan one described below, differs from these in habit, and I have seen no fruit, but there is no other genus to which it can be referred on account of its four very short stamens arranged in a circle round the pistil. The only other genus allied to it is *Platystemma*, a Himalayan plant with distinctly two-lipped flowers.

B. brachyandra, n.sp.

Stemless. Leaves obovate serrate hairy dark green, obtuse 3 inches long by 1½ inch wide, nerves 6 or 7 pairs covered beneath with long red hairs, back of leaf punctate. Scape short few flowered about 3 inches long hairy unbranched. Calyx lobes free nearly to base linear hairy green nearly as long as corolla lobes. Corolla tube very short, lobes broad rounded oblong explanate subequal pale lilac, about ½ inch across. Stamens 4, filaments very short, anthers broad waxy sub-globose connivent round the pistil. Style longer slender curved white. Capsule cylindric narrow 1 inch long scabrid, straight, on pedicels elongated to ½ inch.

Lankawi, Gunong Chinchang at Kwala Malacca (Curtis).

Found quite dried up in February 1899, and brought alive and flowered in the Botanic Gardens, Penang.

11. Orchadocarpa, n. gen.

Herb or shrublet with opposite unequal leaves. Flowers small blue racemose or cymose, pedicelled. Sepals free to base narrow lanceolate. Corolla tube short, limb 2 lipped unequally. Stamens 2, filaments short exsert sintuate, glabrous, anthers bilobed reniform connivent by their edges. Ovary hairy oblong style short. Stigma capitate. Capsule oblong hairy enclosed in the sepals.

Sp. *O. lilacina*, n.sp.

Stem short to 4 inches long stout woody. Leaves crowded at the top long petioled thin ovate or ovate lanceolate acute, strongly serrate covered with closely felted short hairs, base broad inaequilateral 3 to 7 inches long 1½-3 inches wide, petiole slender 3-6 inches long. Peduncle 3-4 inches long pubescent villous bearing a terminal pubescent umbelliform panicle, or simply racemose. Sepals linear pubescent ⅙ inch long. Corolla pale lilac-blue, tube very short, limb distinctly bilabiate, upper lip smaller, lobes short rounded, lower lip longer trifid, median lobe longer than the others oblong obtuse, pubescent across. Stamens 2, filaments from the mouth of the corolla tube thick, twisted at the top, anthers large reniform. Ovary oblong pubescent. Style distinct not larger than the calyx. Stigma very small capitate. Capsule short oblong hairy enclosed beaked in the calyx.

Perak (Scortechini 406*a*), Gunong Batu Putih (Wray 302) 298.

12. Rhynchoglossum, Bl.

Herbs succulent and nearly glabrous. Leaves opposite thin. Raceme terminal lax flowers pendent. Calyx campanulate toothed or lobed. Corolla tube cylindric narrowed above, limb bilobed, upper lobe very short bifid, lower much longer 3 lobed. Stamens 2 perfect affixed to the middle of the corolla tube, anthers connivent, cells ellipsoid parallel. Staminodes 2, or absent.. Disc cylindric. Ovary ovoid glabrous. Style longer. Stigma dilate. Capsule included in the calyx ellipsoid membranous 2-valved. Seeds narrowly ellipsoid smooth.

R. obliquum, Bl. Bijdr. 741.

Succulent herb-20 inches tall. Leaves 1-3 inches long $\frac{1}{2}$-1 inch wide glabrous or nearly so ovate acuminate, petiole $\frac{1}{2}$ inch long or less. Racemes lax about 6 inches long, flowers numerous pale to deep violet. Bracteoles filiform $\frac{1}{12}$-$\frac{1}{6}$ inch long. Calyx tubular $\frac{1}{4}$ inch long enlarged in fruit, lobes triangular or lanceolate. Corolla $\frac{5}{8}$ inch long, lower lip several times longer than the upper one, subtrilobed. Capsule ellipsoid $\frac{1}{3}$ inch.

Clarke, Mon. Phan. p. 161, Fl. Brt. Ind. IV, p. 367 *R. Blumei*, Dec. Prodr. 9, p. 274; *Loxotis intermedia*, Benth. Scroph. Ind. p. 57, Don Gen. Syst. 4, p. 664 *L. obliqua*, R. Br. Benn. Pl. Jav. Rar. p. 102, t. 24; Miq. Fl. Ind. Bat. 2, p. 731, t. 35, fig. 3.

Perak, Larut Hills (Fox), Batang Padang (Wray 1447), at 2000 feet elevation.

Distrib. Tenasserim and Malay islands.

13. *Epithema*, Bl.

Small rock-herbs, succulent pubescent. Stem simple or branched. Leaves few, alternate or opposite above petioled or sessile, ovate usually cardate. Peduncles long, from the upper axils erect. Bract single ovate or cucullate. Flowers small blue or white in a scorpioid cyme on short pedicels. Calyx campanulate lobes 5 acute. Corolla tube short, limb distinctly 2 lipped, lobes acute or obtuse subequal. Stamens perfect 2 posterior, anterior ones sterile shorter, anthers cohoerent. Disc unilateral or almost surrounding the ovary. Ovary ovoid. Style longer. Stigma subcapitate. Capsule globose enclosed in the enlarged calyx on a thickened and a longer pedicel splitting transversely (a pyxis). Seeds ellipsoid or oblong, spirally reticulate.

Species about 6 Asiatic, all very closely allied, and one African.

E. saxatile, Bl. Bijdr., p. 738.

Succulent herb 3-12 inches tall. Stem viscid pubescent, leaves very variable, opposite, ovate cordate denticulate or crenulate. Stigmose or hairy 1½-6 inches long, 1-5 inches across, petiole ¼-1½ inch long. Peduncle 1-2 inches long viscid, cyme ¾ inch across subtended by a broad sessile truncate denticulate bract. Flowers numerous subsessile. Calyx viscid pubescent tubular, split about half way down into 5 narrow lobes, ¼ inch long. Corolla tube as long straight white, three upper lobes oblong obtuse tipped with violet, lower two connate broader subovate denticulate thinner pellucid tipped mauve with darker central spots , mouth of tube inside hairy. Stamens 4 in 2 pairs, filaments incurved, adnate to the mouth of the tube white, anthers 2 oblong connate yellowish. Ovary ovoid enclosed in a fleshy truncate yellow disc. Style stout glabrous. Stigma capitate. Capsule globose pubescent surrounded by the much enlarged ovate acute sepals and borne on the thickened elongate to ⅛ inch pedicel, circumsciss. Seeds very numerous brown elliptic fusiform spirally ribbed.

Dec Prodr. 9, p. 278; Miquel Fl. Ind. Bat. 2, p. 736; 3 Zoll. Verz. Ind. Arch. 1854, p. 55; Clarke, Mon. Phan. 178.

Pahang, Kota Glanggi (Ridley); Selangor, Kuala Lumpur Caves (Ridley, 8217); Perak, Telor Pinang, Ipoh (Ridley), Batu Kurau (Scortechni 1580) (King's Coll. 10,941), Sungei Ryah (Kunstler 983), Goping (King's Coll. 5872); Lankawi Islands (Curtis 2107).

Distrib. Java, Borneo, Sumatra (Karang Natu Peak Forbes 3122) on limestone rocks.

14. Monophyllæa, R. Br.

Succulent herbs with an unbranched stem and one large leaf herbaceous cordate ovate sessile. Peduncles numerous from the leaf base, with racemose or cymose inflorescence. Flowers small white. Calyx deeply 5 cleft, lobes elliptic obtuse. Corolla small white, tube short cylindric, limb distinctly 2 lipped, lobes 5. Stamens 4 perfect, filaments short, anthers cohering in pairs or altogether, disc unilateral or a complete ring. Ovary 1 locular. Style short. Stigma capitate. Capsule membranous inclosed in the enlarged calyx irregularly splitting. Seeds oblong minute reticulate.

Species 7, Malay Peninsula and Islands and Siam.

Leaf glabrous, sepals not spreading in fruit 1. *M. Horsfieldi*
Leaf strigosely hairy, sepals spreading in fruit 2. *M. patens*

M. Horsfieldi, R. Br. Benn. Pl. Jav. Rar., p. 121; Ann. Sc. Nat. 2, Vol. XIII, p. 160.

Stem 6 inches to a foot tall. Leaf ovate cordate 6-12 inches long 1-12 inches wide glabrous glaucous beneath. Racemes 2-7 often stout 9 inches long, flowers numerous subsecund, pedicels ¼ inch long glabrous. Sepals glabrous rounded ovate ribbed. Corolla tube short cylindric, upper lip bilobed, lower 3 lobed, lobes rounded, white. Stamens 4 didynamous glabrous, anthers connate. Style short, glabrous, pistil subglobose. Capsule globose enclosed in the enlarged sepals. Seeds oblong brown reticulate very numerous.

Selangor, Kuala Lumpur Caves (Curtis) (Beccari); Perak, Gopeng (King's Coll. 515 and 443).

Distrib. Sumatra, Batu Pantih (Forbes 2660*a*) Java (Lobb) on limestone rocks.

M. patens, n.sp.

Stem 1-4 inches long viscid hairy. Leaf ovate cordate to ovate lanceolate strigose hairy 6 inches long 4-6 inches across. Racemes slender 4-20, pubescent 4-5 inches long. Flowers in pairs, pedicels slender pubescent $\frac{1}{4}$ inch long in fruit. Sepals lanceolate hairy spreading in a stellate manner in fruit, ribbed. Corolla tube short lobes white. Stamens 4 glabrous didynamous. Pistil ovoid. Style short thick glabrous. Capsule globose glabrous. Seeds numerous black tessellated.

Selangor, Kuala Lumpur Caves (Ridley 8222) (King's Coll. 7052); Perak, Kinta, (Curtis 3136), Sungei Siput (3135), Batu Kurau (Scortechini 1574 and 1579) Gopeng (Kunstler 449).

Endemic. On limestone rocks.

M. glabra, n.sp.

Stem succulent 6 inches to a foot tall. Leaf ovate cordate obtuse glabrous glaucous beneath $2\frac{1}{2}$-6 inches long 2 to 6 inches wide. Racemes slender glabrous 4 to 10, 2-8 inches long lax. Flowers numerous in pairs, pedicels slender $\frac{1}{4}$ inch long spreading deflexed. Sepals $\frac{1}{8}$inch long in fruit lanceolate acute glabrous not spreading. Corolla brown ond white. Capsule, enclosed in the sepals cylindric oblong.

Siam, Kasum (Curtis 3219).

Endemic.

15. *Stauranthera*, Benth.

Herbs succulent pubescent, with alternate leaves, the opposite ones reduced, falcate elliptic acuminate inaequilateral.

Cymes peduncled lax. Bracts small. Flowers medium sized showy. Calyx campanulate lobes five. Corolla campanulate rounded tube short, shortly spurred or gibbous, limb two lipped, lobes rounded nearly equal. Stamens 4 perfect, anthers connate bilocular, bases diverging. Ovary subglobose or ovoid, no disc. Style short. Capsule depressed globose irregularly split. Seeds minute obovoid reticulate.

Species 3. Assam and Malay islands.

Flowers large, base of corolla spurred	1. *S. grandiflora*
Flowers small base of corolla not spurred	2. *S. umbrosa*

S. grandifolia, Benth., Scroph. Ind. p. 57.

Succulent herb with a fleshy stem about 6 inches tall. Leave 6 inches long by 4 wide or less oblong obtuse crenulate deep green above bullate glabrous inaequilateral pubescent on both sides petiole 1 inch long. Cyme short pubescent 3 inches long with a few, 9 large flowers. Bracts short ovate, flowers 1¼ inch across. Calyx lobes lanceolate ovate pubescent. Corolla tube short and broad with a short spur at the base, lobes short broad rounded, violet with a central yellow bar reaching to the spur. Stamens subequal 4, filaments slender, anthers connate. Ovary ovoid, style shorter than the stamens. Stigma capitate. Capsule.

Clarke De C. Prodr. l.c. 190; Dietr. Syn. pl. 3, 582, R. Br. Benn. Pl. Jav. Rar. p. 121; Hook. Bot. Mag., t. 5409; Miq. Fl. Ind. Bat. 2, p. 735; Clarke, Comm. and Cyrt. Beng. t. 89, bis.

Penang (Wallich 6395) rocks near Balik Pulau (Curtis); Perak, Larut (King's Coll. 2248).

Distrib. Burmah. Rare on rocks.

S. umbrosa, Clarke, Comm. and Cyrt. Beng. 189; Dec. Prodr. 189.

Stem 3 to 6 inches tall. Leaves ovate oblong falcate inaequilateral strigosely hairy especially beneath 6-8 inches long 2-4 wide. Cymes spreading few to 10 flowered peduncles and pedicels hairy. Calyx shortly five-lobed, cup-shaped, lobes triangular, ¼ inch long in flower, larger and spreading in fruit. Corolla ½ inch long, white with a violet spot in the centre. Ovary unilocular. Capsule circumciss near the base.

Cyananthus umbrosa, Griff. Notul. 4, pl. 154; Ic. Pl. Asiat. 437.

Johor, Gunong Panti (Ridley 4166); Pahang, Tahan Woods (Ridley 2183); Selangor Woods at the Kuala Lumpur Caves (Ridley 8224); Perak, Telok Pinang near Ipoh (Ridley 9773), Kinta (King's Coll. 7144).

Distrib. Assam. In damp rocky woods on the ground.

16. *Rhynchotecum*, Bl.

Shrubs little branched, young parts red-woolly. Leaves opposite or alternate. Cymes axillary decompound. Flowers small numerous. Calyx 5 cleft nearly to the base, lobes narrow. Corolla small campanulate, limb two-lipped, lobes 5 ovate or oblong subequal. Stamens 4 perfect affixed to near the corolla base, filaments short curved, anther cells 2 subparallel. Ovary sessile ovoid, disc very small annular or absent. Style much longer than ovary. Stigma subcapitate. Berry small globose with persistent style, pericarp pulpy. Seeds very small smooth.

Species 9 Indo-Malayan.

R. parviflorum, Bl. Bijdr. p. 775.

A little-branched shrub about 3 feet tall, leafy above upper parts ferruginous hairy. Leaves opposite lanceolate acute cuneate at the base serrate, 8 inches long, 3½ inches wide, dark green glabrous above except the midrib, covered with red wool beneath thickest on the nerves, nerves 13 pairs petiole 1 inch long. Cymes numerous short from the lower part of the stem laxly branched, red-woolly. Flowers very small yellowish white. Sepals nearly free to the base linear lanceolate acute woolly, ⅛ inch long. Corolla little longer campanulate lobes oblong obtuse white. Stamens 4 very short, filaments short and thick. Style longer than the ovary. Capsule ovoid-globose hairy shorter than the sepals.

Clarke, Prodr. p. 195; Miq. Fl. Ind. Bat. 2, 750. *Isanthera parviflora*, Ridl., Trans. Linn. Soc., III, 331.

Pahang, Kuala Tahan (Ridley 2171); Penang (Wallich Pulau Betong and Penara Bukit) (Curtis 3035); Perak, Larut Hills (Ridley) (King's Coll. 2237) (Scortechini 1222).

In woods, terrestrial.

Distrib. Java, Sumatra.

17. *Cyrtandromoea*, Zoll.

Shrubs with square stems, leafy above. Leaves opposite subequal herbaceous ovate elliptic or lanceolate serrate petioled. Flowers 1 to many in axillary or basal cymes. Bracts 2 in the middle of the pedicel. Calyx tubular shortly 5 toothed or lobed, enlarged in fruit, usually red. Corolla large white tubular thin glabrous, tube dilated at apex lobes rounded subequal. Stamens 4 perfect in 2 pairs subsimilar, filaments linear anthers ovoid small. Pistil longer than stamens. Stigma cupshaped. Capsule globose or oblong enclosed in the enlarged calyx, opening irregularly. Walls membranous. Seed numerous sinuate oblong obtuse ribbed reticulate.

Species ten Malayan.

Flowers solitary axillary	1. *C. acuminata*
Flowers cymose axillary. Leaves ovate	2. *C. megaphylla*
Flowers cymose at the base of a woody stem. Leaves acuminate at base	3. *C. grandis*

1. *C. acuminata*, Benth and Hook. fil., Gen. Pl. 2, p. 1020.

A shrubby plant 3 or 4 feet long, stem rather weak, hollow, young parts pubescent. Leaves lanceolate or ovate narrowed into the petiole acute, serrate, strigose above pubescent especially on the nerves beneath, 4-6 inches long 2-3 inches wide petiole 1 inch long. Flowers solitary axillary on short $\frac{1}{8}$ inch long or lanceolate slender hispid peduncles with 2 very small linear tracts in the middle. Calyx tubular $\frac{1}{2}$ inch long glabrous with short teeth dull red. Corolla nearly straight 1 inch long tube thick lobes rounded white. Capsule oblong 4 angled $\frac{1}{4}$ inch long, seeds minute deeply reticulate.

Clarke, Mon. Phan., p. 185 ; *Busea subsessilis*, Miq. Fl. Ind. Bat. 2, p. 735.

Selangor, Ginting Bidai (Ridley); Negri Sembilan, Bukit Sulu (Cantley); Perak, Larut Hills (Ridley 2917) (Scortechini 83 and 329*a*) (King's Coll. 5342 and 2139); Penang (Porter in Wallich's Coll. 808) (Maingay 1232/2) (King) Tonoh (Machado). Tringanu, Bundi (Rostado).

Distrib. Sumatra.

Native Name :—Supujit Jantan, Supujit Bukit and Sumpuh Munahon. The leaves are used for in baths in jungle fever.

In forests on banks at about 1000 feet and upwards.

2. *C. megaphylla*, Hemsl., Ic. Pl. 1555.

Herb about three feet tall. Stem bluntly 4 angled pittey in centre pubescent. Leaves opposite subequal, herbaceous ovate acutely acuminate coarsely serrate, base rounded or subcordate 6-10 inches long 3 inches wide pubescent, petiole 3-5 inches long. Cymes from a little above the axils lax many flowered. Calyx tubular pubescent shortly 5 toothed half an inch long, inflated in fruit. Corolla about 2 inches long white obliquely infundibuliform, lobes rounded subequal, ovary perfectly bilocular.

Perak, Larut Hills at 2100 feet alt. (Wray) (Scortechini), Gunong Batu Putih (King's Coll. 8155); Selangor, Ginting Peras (Ridley 7602).

Endemic in forests.

3. *C. grandis*, n.sp.

A large shrub several feet tall base of stem woody half an inch through, glabrous. Leaves opposite equal herbaceous lanceolate acuminate glabrous narrowed acuminate at the base, margins dentate, 12 inches long 4 inches wide, nerves elevated 10 pairs, petiole 1-1¼ inch long. Cymes large lax borne on the base of the stem, and on the upper part below the leaves, many flowered 2½ to 6 inches long pubescent. Pedicels ¼ inch long. Calyx tubular pubescent with linear lobes, red half an inch long. Corolla white 1 inch long tube straight thick lobes rounded. Fruit globose ½ inch long enclosed in the enlarged calyx and seed minute black oblong ribbed and reticulate.

Selangor, Kuala Lumpur (Curtis) (Ridley 10498); 15th mile Pahang Track (Ridley 8552), Bukit Hitam (7576); Perak, Ulu Bubong (King's Coll. 10150), Gunong Batu Putih (King's Coll. 8155).

Endemic. Common on banks in forests but local. A very fine species.

18. *Cyrtandra.*

Half shrubby plants, terrestrial or rarely epiphytic, stems often branched usually tall. Leaves opposite subequal or one smaller. Bracts large or small free or connate. Bracteoles ovate or narrowed or absent. Cymes axillary on long or short peduncles, many flowered. Calyx tubular 2 to 6 lobed usually 5 lobed, lobes lanceolate. Corolla tube short, usually pubescent infundibular straight, lobes 5 subequal or more or less distinctly 2 lipped, usually white spotted or marked with yellow brown, or red. Stamens 2 perfect shortly exsert or included affixed to the corolla, anthers bilocular connivent free or coherent. Staminodes small 2-3. Disc annular or unilateral. Ovary ovoid or oblong. Style long filiform. Stigma sub-bilobed. Berry sausage-shaped or ovoid, firmly fleshy, usually beaked with the persistent style. Seeds numerous minute ellipsoid smooth or obscurely reticulate.

Species about 170. Malay Peninsula and islands to Polynesia.

Bracts free. Leaves alternate	1. *C. dispar*
Leaves opposite one much reduced	
Margins entire	
Nerves conspicuous	2. *C. suffruticosa*
Nerves obsolete	3. *C. falcata*
Leaves opposite subequal	
Ovovate serrulate	4. *C. pilosa*
Oblanceolate crenulate	5. *C. lanceolata*
Ovate or lanceolate	6. *C. pendula*
Bracts connate into a large white cup	7. *C. cupulata*

1. C. dispar, De C., Prodr. 9, p. 282.

Shrub with a stout pale reticulate stem fistulous, obscurely 4 angled. Leaves alternate obovate oblanceolate, petioled strongly toothed especially at the apex inaequilateral glabrous above, red pubescent beneath 12 inches long 4 inches wide petiole an inch long. Flowers small very numerous in axillary cymes, pedicels $\frac{1}{4}$ inch hispid. Calyx persistent cup-shaped with 5 lanceolate acuminate hairy lobes. Corolla white $\frac{1}{2}$ inch long tube dilated upwards hairy outside lobes short obtuse rounded. Stamens shorter than the tube, abortive ones very much reduced. Pistil hairy. Fruit $\frac{1}{4}$ inch long oblong ellipsoid hairy.

Miq. Fl. Ind. Bat. 2, p. 742; Clarke, Dec. Prodr. p. 203, Tab. XXIII.

Penang, Government Hill (Curtis 1204) (Wallich 807) (partim) (Maingay 1232); Perak, Bujong Malacca (Ridley 9703), Larut Hills (Ridley and Fox, Scortechini 367 and 1231, Wray 2196) (King's Coll. 2052, 5731 and 3891).

Distrib. Sumatra.

2. *C. suffruticosa,* Ridl., Trans. Linn. Soc., p. 331.

A large shrub 4 feet tall with hollow 4 angled pale stems ¼ inch thick. Leaves opposite, the alternate one often very much smaller lanceolate abruptly acuminate subfalcate inaequilateral, edges entire, nerves conspicuous about 12 pairs, glabrous when adult, young leaves and petioles red pubescent, 7 to 9 inches long 2½-3 inches wide, petiole ½-¾ inch long. Peduncles short and thick axillary. Bracts free ovate acute pubescent, 1 inch long ½ inch across. Flowers about 6 in a head nearly sessile. Calyx deciduous sepals linear. Corolla glabrous over an inch long, base cylindric dilated upwards, lobes rounded obtuse white with brown streaks in the throat, anthers large elliptic. Style pubescent. Fruit ¾ inch long sausage-shaped.

Johor, Tengarah (Fielding,) Pulau Tiuman (Ridley) on rocks; Perak (Scortechini 142 *b*), Gopeng (King's Coll. 4720), Kota Bahru (King's Coll. 569), Tupai, Larut (Wray 2845.)

Endemic. Generally growing on rocks put (King's Coll. 4720) from the top of a high tree. Wray describes the flowers as "white marked in the throat with dark claret. Bracts green without, claret within, fruit light green finely spotted paler."

3. *C. falcata,* n.sp.

Epiphytic about 2 feet tall, stem quadrangular fistulose, pale. Leaves lanceolate acuminate falcate alternate, often with small opposite ones, glabrous when adult, narrowed at the base into the petiole, nerves about 10 pairs, 7 or 8 inches long 1½ inch wide, petiole 1 inch long pubescent. Cymes axillary shortly ⅛ inch peduncled. Bracts broadly ovate acute pubescent ½ inch long. Flowers few shortly pedicelled. Fruit fusiform ½ inch long.

Selangor, woods round the Kuala Lumpur Caves (Ridley 8219); Perak (Wray 2845, Scortechini 142*b*). Endemic rare.

Allied to *C. oblongifolia*, Hook. fil., and *C. suffruticosa*, Ridl., but the leaves are much narrower than those of the latter, and thinner with conspicuous nerves, than those of the former.

4. *C. pilosa*, Bl. Bijdr. p. 770.

Shrub with stout 4-angled hollow stems as much as ½ inch through, 3 feet tall upper parts pubescent. Leaves opposite obovate narrowed into a winged petiole, margins serrate above more or less covered with pale hairs from a swollen base, in old leaves often glabrescent, beneath covered with red hairs on the nerves, nerves prominent 10-12 pairs 8-18 inches long 3-4 inches wide. Bracts ovate or lanceolate acuminate hairy 1 inch long. Cymes small nearly sessile axillary. Calyx tubular hairy ½ inch long bifid. Corolla white with one inch long silky hairy, tube infundibuliform stout, upper lobes oblong obtuse, lower two connate shortly bifid obtuse punctate above. Stamens little longer than the tube filament glabrous abortive, stamens short. Fruit ovoid conic acute brown reticulate-tessellate ½-¾ inch long.

Don. Gen. Syst. 4, p. 661, De C. Prodr. 9, p. 282, Miq. Fl. Ind. Bat. 2, p. 742, Clarke, Mon. Phan. 231, *C. decurrens*, De Vriese, Pl. Ind. Bat. Reinwdt. p. 14, Miq. l.c. p. 746, Clarke l.c. 233.

Johor, Gunong Panti (Ridley), Bukit Tanah Abang (Kelsall); Negri Sembilan, Bukit Tanga (Napier), Bukit Sulu (Cantley); Selangor, Bukit Kutu (Ridley 7574), Bukit Hitam, Pahang Track 8560 and 8554); Perak, Larut Hills (Ridley 2915) (Curtis 2897) (Scortechini 354 and 270*a*). King's Coll. 5588); Penang (Wallich 807), Penara Bukit. On banks in forests.

Distrib. Tenasserim to New Guinea.

Native name "Poko Gugunjah Bukit." In rocky woods up to about 2000 feet altitude I am unable to separate specifically the forms, described respectively under the names of *C. pilosa*, Bl., and *C. decurrens*, De Vr., at least as far as applies to the variety *Wallichii* of the latter.

The main distinction seems to be in the amount of hairiness of the leaves, in which point the plant seems very variable. The plant distributed as from "Singapore Lobb" was doubtless from Penang, as it has never since been seen in Singapore and is hardly likely to have occurred here, as it is a hill plant.

5. *C. lanceolata*, Ridl., Journ. Linn. Soc., XXXII, 527.

Stem about a foot tall, the base bare, quadrangular, upper part pubescent. Leaves oblanceolate acute, narrowed at the base crenulate almost entirely glabrous 12 inches long 4 inches wide, petiole. Cymes at the base of the stem below the leaves very shortly peduncled lax many-flowered, pedicels ¾ inch long hispid. Bracts lanceolate small hispid. Calyx 1½ inch long tubular hispid, lobes 3 linear acuminate. Corolla 1½ inch long dilate above pubescent, white throat yellow, anthers long narrowed above. Style 1 inch long pubescent. Stigma bilobed lobes oblong linear.

Johor, Gunong Panti (Ridley). Endemic, rare.

6. *C. pendula*, Bl., Bijdr. p. 768.

Stem one or two feet tall. Leaves alternate ovate cordate or lanceolate entire or crenate dark green and glabrous above, often barred with white and covered with reddish tomentum beneath, 8 inches long 4-6 inches wide, petiole 3-6 inches long, opposite leaf in each internode reduced to a subulate process. Capitulum of 20 flowers on peduncles 4 inches long decurved appressed hairy. Bracts lanceolate acuminate hairy. Flowers shortly pedicelled. Calyx tube half an inch long, thin shortly bifid. Corolla tube 1½ inch long, base narrow curved ventricose upwards, cream-colored or pale yellow, hairy upper lip of two rounded lobes, lower of three broader oblong rounded ones, all creamy white or pale yellow with purple spots in the mouth and tube. Stamens 2 glabrous, filaments purplish sinuate, anthers oblong connivent. Style stout white, stigma transversely oblong. Fruit sausage shaped ½ inch long.

G. Don. Syst. Prodr. p. 660, De C. Prodr. 9, p. 281, Miq. Fl. Ind. Bat. 2, p. 739, Hook. Ic. Pl. t. 736, Clarke, Dec. Prodr. 242.

Singapore, Bukit Timah (Ridley 2703), King; Johor, Gunong Panti, Pulau Tioman; Pahang, Kuala Tembeling (Ridley); Malacca (Maingay); Selangor, Kuala Lumpur, Bukit Hitam (Ridley); Perak, Larut Hills (Curtis 2036) Scortechini 142*b* and 254*b*) (Wray 2845), Ulu Bera (King's Coll. 10810); Sungei Ujong, Bukit Sulu (Cantley).

Distrib. Java and Sumatra.

In rocky woods abundant. Native name "Poko Asam Batu." The leaves are eaten in curries.

7. *C. cupulata*, Ridl., Journ. Linn. Soc., XXXII, p. 527.

A shrubby plant 2 or 3 feet tall, stem terete or more or less four-angled above covered with red hair. Leaves opposite equal, very variable, oblanceolate with an acuminate base serrately toothed scantily hairy above, more hairy beneath, petiole sometimes winged to the base villous an inch long, blade 12 inches long 4 inches wide. Peduncles half an inch long axillary in pairs villous. Bracts connate into a white hairy cup an inch long. Bracteoles short lanceolate acute white. Flowers numerous opening singly little longer than the bract. Corolla 1 inch long curved infundibuliform, 2 lipped pubescent white yellow and brown in the mouth, lobes 5 subequal ovate obtuse. Stamens included 2, pistil short, ovary oblong with a terminal tuft of hair. Style short curved. Stigma clavate bilobed. Fruit ½ inch long fusiform.

Malacca, lower slopes of Mt. Ophir (Ridley 7575) Sungei Buluh (10550); Pahang, Tahan Woods (Ridley 2150); Perak, Tapa (Wray 1389 and 191), Ulu Bubong (King's Coll. 10250), Larut Hills (Scortechini 366), Chanderiang (King's Coll. 5733).

Endemic in wet woods.

A Third Contribution to the Knowledge of the Hymenoptera of Sarawak.

BY. P. CAMERON.

This paper is in continuation of one on the Hymenoptera of Sarawak based on material collected by Mr. Robert Shelford, M. A., published in the journal of the Straits Branch Royal Asiatic Society in 1903 and another in 1903.

SIRICIDÆ.

Stirocorsia cariniceps, sp. nov.

Black, the hind trochanters and femora red, the hind tibiæ thickly covered with white pubescence which gives it a white appearance; the fore wing fuscous-violaceous; a hyaline cloud extends from the base of the cubitus to near the base of the radius and extending to the oppisite side of the wings, the lanceolate cell being also hyaline; the basal half of the hind wings hyaline, the apical lightly fuscous-violaceous; the stigma and nervures black. Temples, pleuræ, sternum, apex of abdomen and legs covered with white pubescence. ♀.

Length 13-14 mm.

Kuching. November.

On the sides of the vertex are 5 projections, rounded in front and arranged one above the other like the steps of a stair; the upper part of the front closely, strongly rugosely punctured, the lower is more irregularly and coarsely reticulated, with a smooth space, longer than broad, in the centre above; in the centre below is a somewhat triangular depression—the broad part above—and having, at the top, a large deep round fovea. Front coarsely, irregularly punctured-reticulated, more closely above than below, where the reticulations are more widely separated and irregular; in the centre near the apex is a large, longer than broad, smooth space. Frontal keels distinct, the apical curved and projecting, more clearly separated than the others, the upper transverse and less developed than the lateral. Inner orbits obliquely sloped, coarsely rugosely punctured. The eyes behind are bordered by a keel which extends from the top to half way down the malar space, and is clearly separated from the eyes. Pronotum closely punctured; the meso- more strongly and irregularly, but not so closely and having a wide smooth line in the centre of the basal half; the scutellum is less closely and less strongly punctured, and with a smooth, shining, slightly violaceous space in the centre. It is separated from the metanotum by a deep, curved, crenulated furrow. Post-scutellar region closely rugose; the median segment more closely and less strongly punctured and having a smooth raised curved line at its base. The basal 4 segments of the abdomen are closely punctured, the punctuation becoming gradually weaker; at the base is a deep crenulated furrow; the last is more closely and strongly punctured and with its apex depressed and smooth, except in the centre, which projects. The apices of all the segments are smooth; the ventral closely and strongly punctured.

The pro- and mesopleuræ are closely punctured, the latter less strongly at the apex, the meta- coarsely aciculated, shining. The hinder tibiæ have 4 teeth above; below and clearly separated from them, are 4 larger oblique ones, followed by a smaller tooth. The 1st disevidal cellule is of equal width throughout. The frontal area, above, is not half the length of the bottom. Clypeus and the apex of mandibles thickly covered with golden hair. Second abdominal segment not quite so long as the following 2 united. The median segment laterally is bounded by a keel; above this is another longitudinal keel.

Stirocorsia belongs to the Oryssinini.

CYNIPIDÆ.

Mesocynips insignis, Cam.

Mr. Shelford has sent the undescribed ♂ of this species from Matang. It has the antennæ filiform, longer than the body, 15-jointed, the scape luteous, the flagellum black, bare. The last abdominal segment is as long as the preceding; it is closely and distinctly, the penultimate sparsely, punctured. The basal joint of the hinder tarsi is longer than the 4 following joints united. The apical 2 abdominal segments are marked with black.

CHALCIDIDÆ.

Antrocephalus maculipennis, sp. nov.

Black; the wings hyaline a cloud at the stigma extending to the middle, beyond which is a fainter, smaller cloud; between this and the apex of the wing is a wider, more irregular cloud, narrowed above; the apex of clypeus with a broad, rounded incision; the lateral lobes broad and rounded; head, thorax, legs and apex of abdomen covered with silvery pubescence. ♀.

Length 6 mm.

Hab. Kuching. December.

Head closely and strongly punctured; the inner orbits margined, the space between the keel and the eyes irregularly, transversely striated, the lower half of the front irregularly longitudinally striated, the striæ intermixed with the punctures. Prothorax rugosely punctured; the sides keeled to near the centre above. Mesonotum closely rugosely punctured at the base, the rest and the scutellum closely covered with round punctures. Metanotum coarsely reticulated; at the base are 2 irregular oval foveæ, followed, at their apex, by a larger longer one, sharply obliquely narrowed at the base, narrowed and rounded at the apex; there are no lateral projections. Propleuræ above coarsely punctured, the middle irregularly longitudinally striated, below smooth. The central depression of the mesopleuræ has the upper two-thirds closely, stoutly, longitudinally striated, below smooth, the rest rugose; metapleuræ rugosely reticulated and punctured. Abdomen slightly shorter than the thorax.

Antrocephalus rufipes, sp. nov.

Black, the legs red, their coxæ and trochanters black and thickly covered with white pubescence; the wings with a small cloud at the stigma, the nervures black; the basal 2 joints of flagellum red. ♀.

Length 5 mm.

Hab. Trusan. November.

Cheeks, malar space and outer orbits thickly covered with silvery hair; the inner orbits clearly margined; frontal depression closely, minutely transversely striated, with a smooth, shining, transverse band below the ocelli. Occiput closely reticulated. Pronotum closely punctured; the basal slope keeled round the edges, except in the centre above. Mesonotum and scutellum similarly punctured; the furrows distinct; the 2 scutellar teeth, wider than long and rounded at the apex; the part beneath with a closely striated band. Median segment with 2, slightly converging at the base, keels down the centre and an oblique one on the sides. Pleuræ rugosely, closely punctured; the centre of the mesopleuræ closely striated, the striated part bounded at the base by a stout, smooth keel which is roundly curved above and dilated in the middle; the apex of the mesopleuræ is rugose above, smooth, shining, and depressed below. Metapleuræ coarsely rugose; below both are thickly covered with silvery pubescence. The upper two-thirds of the hind femora is roundly curved more dilated above than below; the lower part is clearly separated from the upper and rounded. Tegulæ rufous. Middle abdominal segments thickly covered with silvery hair.

Megacolus fulvipennis, sp. nov.

Black, the 1st abdominal segment and the sides ferruginous, the tarsi red; the femora with 5 large teeth of which the apical 2 are more widely separated than the others; apex of clypeus transverse; wings fulvo-hyaline, the nervures blackish. ♂.

Length 8 mm.

Hab. Kuching. September.

Head rugosely reticulated; the frontal depression transversely striated and with a keel down the middle. Thorax closely, rugosely punctured. Scutellar projection large, with 3 or 4 stout irregular keels. Metanotum stoutly, irregularly reticulated; the sides with a large tooth at the base and a smaller, more rounded, one at the apex. Mesopleural depression punctured throughout. Legs thickly covered with white pubescence, as are also the breast and metapleuræ.

Megacolus rufitarsis, sp. nov.

Black, the abdomen and tarsi rufous, the hind femora with 7 short teeth; a longish stout tooth or spire between the antennæ; the apex of scutellum projecting in the middle, its apex almost transverse. ♂

Length 8 mm.

Hab. Kuching. July.

Head rugosely punctured, the punctures running into reticulations; the frontal depression above stoutly transversely striated, with a stouter longitudinal keel down the centre; the lower part with curved furrows; the occiput irregularly longitudinally striated. Metanotum with large, irregular reticulations. Propleuræ smooth; near the middle is a wide, oblique furrow, bordered below by a rounded keel; mesopleuræ covered with large, round deep punctures; the central depression wide, slightly narrowed below, smooth, obscurely striated above. The 3 basal teeth of the hind femora are narrower and closer together than the others.

In colouration this species is identical with *M. striolatus*, from which it may readily be known by the greater number of teeth on the femora, by the transverse apex of scutellum and by the frontal spine.

Megacolus striolatus, sp. nov.

Black; the 1st abdominal segment and the tarsi testaceous, the wings hyaline, narrowly streaked with fulvous, the nervures and costa black; hind femora with 5 teeth, the basal 3 short and rounded; the apical 2 sharper and longer. ♀.

Length 8-9; terebra 3-4 mm.

Hab. Kuching July.

Front and vertex coarsely rugosely punctured, almost reticulated; frontal depression transversely striated; face and clypeus covered with large, round, clearly separated punctures; above the centre of the clypeus is a deep depression or pit. Occiput obliquely depressed, its centre smooth; the sides punctured above, below irregularly striated. Pronotum closely irregularly punctured; the meso- more closely punctured, its centre at the base irregularly, transversely striated; scutellum coarsely, irregularly reticulated; its apex projecting, rounded, with a slight, wide incision in the centre; it is depressed, with some slight keels at the base. Metanotum coarsely, irregularly reticulated; the basal reticulations irregular and broken; the basal tooth, large rounded and narrowed at the apex, its length as long as the width at the base. Propleuræ irregularly punctured with a smooth space in the centre above; the meso- and metapleuræ with large, deep punctures; the oblique central depression on the former smooth at top and bottom, striated in the centre. The 4 front knees are testaceous, the basal 3 short teeth on the hind femora are widely separated; the 4th tooth is long and becomes gradually, obliquely depressed to the 5th which is shorter and sharper and has a short tubercle at its apex.

EVANIIDÆ.

Pristaulacus crythrocephalus, sp. nov.

Black, the scape of the antennæ, head, pro- and mesothorax, red; the fore legs of a paler red colour. Wings fuscous-violaceous, paler at the apex, the stigma dark testaceous, black at the base. ♀.

Length 20 mm. terebra 20 mm.

Hab. Kuching.

Head smooth and shining, covered with a pale golden down, which is longest on the clypeus. Apex of clypeus depressed in the middle and with a stout keel on the lower edge; the sides broadly rounded. Mandibles large, longer than the clypeus from top to the bottom of the apex; there are 3 large teeth;

the apical larger than the basal, two. Mesonotum coarsely, rugosely punctured and irregularly reticulated. Scutellum with 4 irregular, curved transverse keels; the depression at its apex and at the base of the metanotum stoutly, closely striated. Median segment irregularly, strongly reticulated. Pleuræ, except at the base of the pro-, closely irregularly reticulated. Antennæ 14-jointed; the scape not quite twice the length of the 2nd; the 2 together are slightly longer than the 3rd, which is distinctly shorter than the 4th. Temples wide. Hinder ocelli separated from each other by the same distance they are from eyes. Base of middle lobe of mesonotum slightly roundly incised in the middle. First recurrent nervure interstitial with the cubital, dilated at its junction with it; the 2nd received shortly beyond the middle of the cellule; the 3rd abscissa of the radins is as long as the other two united. Claws with 4 teeth, the 2 central being longer and sharper than the others.

The ♂ is similarly coloured, has the vertex obliquely raised from the front and has the sides bounded by a longitudinal keel.

Gasteruption rufomaculatum, sp. nov.

Black, the mesopleuræ and mesosternum rufous; as are also the front legs and the underside of the middle coxæ, there is a broad white band near the base of the hind tibiæ; wings hyaline, the stigma fuscous, the nervures darker. ♀.

Length 13; terebra 6 mm.

Hab. Kuching.

Front and vertex shining, smooth, almost bare; the face and clypeus and outer orbits thickly covered with silvery pubescence; the hinder occelli are separated from each other by a slightly greater distance than they are from the eyes. The clypeus above, in the middle, is separated from the face by a distinct curved furrow. Mandibles and trophi dark rufous. Middle lobe of mesonotum closely and strongly transversely striated; the sides of the lateral lobes are more finely striated; the middle at the apex much more widely and more strongly longitudinally striated. Scutellum obscurely transversely striated. Median segment rather strongly transversely striated, the sides less strongly and more irregularly than the metanotum. Centre of propleuræ broadly and strongly striated; the meso- obscurely striated, more distinctly below than above, almost reticulated.

Malar space small, as long as the 2nd antennal joint; the temples large, fully longer than the eyes above; collar short; the 3rd and 4th joints of the antennæ are equal in length and clearly longer than the scape. Parapsidal furrows deep, crenulated; and there is a longitudinal furrow on the apical half of the lateral lobes. Middle tarsi fuscous; the tibiæ darker, paler at the base. Ventral segments of abdomen dark rufous; the apical third of the sheaths of the ovipositor pale. Hind coxæ brownish, transversely striated above.

Belongs to *Gasteruption* S. Str. the 2nd discoidal cellule being divided.

Evania rubra, sp. nov.

Rufous, the abdomen black, the apex of petiole white, the rest of it fuscous-black, darker above than on the sides; legs coloured like the body, but paler in tint, the apical third of the hinder femora, and the hinder tibiæ black; the basal third of the tibiæ white; the hinder tarsi fuscous; wings hyaline, the nervures blackish. ♂.

Length 6 mm.

Hab. Kuching.

Third joint of antennæ slighter longer than the basal two united and slightly longer than the fourth. Head smooth shining and covered with a pale down. Temples well developed, as long as the malar space; the occiput slightly roundly incised. Mandibular teeth black. Pro- and mesothorax smooth; the lower part of the mesopleuræ with round, shallow, clearly separated punctures; median segment reticulated; the base of the metanotum with a curved, smooth, clearly separated area; the pleuræ at the base in the middle smooth. Metatarsus as long as the 2nd and 3rd joints united; the long spur of the calcaria three-fourths of its length. The cubitus originates far behind the stigma, the 1st cubital cell being thus much longer on the lower than on the upper side; the transverse median nervure is received distinctly beyond the transverse basal; the cubitus is very faint, almost obliterated beyond the transverse cubital.

This species has the cubitus originating far back behind the stigma as in *Zeuxevania*, but in that group the 1st cubital and the discoidal cells are not separated as they are in my species and in *Evania*.

BRACONIDÆ.

Chaolta ruficeps, sp. nov.

Black, the head, antennal scape, thorax and 4 front legs rufous; wings dark fuscous-violaceous, with black stigma and nervures; sheath of ovipositor stout, black, covered with long, stiff hair. ♀.

Length 17; terebra 19 mm.

Hab. Buatal. April.

Scape of antennæ smooth, not excavated, or with the sides keeled; its apex below with a stout keel ending in a short broad tooth. Plate below the antennæ large, rounded and narrowed towards the apex; its keel its stout, reaches close to the middle and originates at the base of the antennæ, its apical half being higher than the basal and dilated in the middle; the face below it and the sides above are irregularly punctured and striated. Oral depression with stout, oblique sides above. Temples longer than the eyes. Median segment infuscated in the middle; its sides closely punctured. The sides of petiole closely, distinctly longitudinally striated; the centre more irregularly striated, the striæ running into reticulations; the 2nd and 3rd abdominal segments are closely, strongly longitudinally striated, the striæ stronger in the middle and at the base, the area being similarly striated; the 4th segment is closely, rugose, almost reticulated; the others smooth; the furrows wide and shallow, striated. Wings long; 2nd abscissa of radius about one, fourth longer than the 3rd.

The abdomen is not dilated in the middle and is twice the length of the thorax.

Chaolta lutea, sp. nov.

Luteous, the flagellum of antennæ black; the wings fuscous, behind the transverse median nervure, yellowish hyaline; the stigma black. ♀.

Length 10; terebra 8-9 mm.

Hab. Kuching. April.

Head smooth, shining; in the centre of the face is a depression about twice wider than long and with the sides rounded; oral depression small; temples wide, longer than the eyes. Apex of mandibles black. Apex of scape of antennæ below excavated slightly, the depression stoutly keeled, the keel produced at the apex into a broad tooth; the antennal tubercles stout. Facial plate wider than long, becoming gradually narrowed towards the apex and without a plate at the base. Thorax smooth and shining; flat above; the metanotum with a thin keel down the centre. The depressed sides of the petiole are distinctly longitudinally striated, the raised central part rugosely punctured and striated; the 2nd and 3rd segments are closely, longitudinally striated; the area on the 2nd segment is about twice longer than broad, its sides margined, its apex rounded and half the width of the base; it is more finely longitudinally striated; the 2nd to 4th segments are closely rugose; and have distinct oblique lateral depressions; the suturiform articulation crenulated.

Front depressed, deeply furrowed in the centre; the 3rd joint of the antennæ is slightly, but distinctly longer than the 4th abdomen oval, broader than the thorax and shorter than the head and thorax united. Legs stout, densley covered with pale hair; stigma large, broad; the recurrent nervure is received shortly before the 1st transverse cubital; 2nd abscissa of radius as long as the 3rd of the cubitus and about one-fourth shorter than the 3rd.

This species differs from *Chaolta* proper in the facial plate not having a keel in its centre, in the abdomen being shorter and broader and in the 2nd abscissa of the radius being shorter than the 3rd. In both species the mesonotum is quite flat; in *C. lutea* the scutellum is not raised above the level of the mesonotum; in *C. ruficeps* it is slightly raised; the parapsidal furrows are absent. *C. lutea* may belong to *Platybracon*, Szép.

Lissobracon, gen. nov.

Head cubital; temples broad; occiput and cheeks not margined. Apex of clypeus obliquely depressed, rounded. Antennæ stout. Three cubital cellules. Radial cellule long, extending to the apex of the wing. Transverse median nervure received beyond the transverse basal. Second discoidal cellule closed. Anal nervure not interstitial. Hinder wings as in *Bracon*, but with the pobrachial and the transverse pobrachial nervures obsolete. Legs of moderate length. Abdomen smooth and shining, without transverse furrows on any of the segments.

There is a clear malar space; scape of antennæ short, thick, not much longer than broad, not much longer than the 3rd. Mandibles with a long upper and a shorter and blunter subapical tooth. Mesonotum indistinctly lobed; the furrows shallow, not clearly defind. Calcaria short. Antennæ stout, not narrowed towards the apex.

This genus has not a semicircular opening between the mouth and the mandibles, it being transverse, not rounded. In other respects it agrees fairly well with the *Braconneæ* except that the transverse median nervure is not interstitial; but it does not fit very well in to any of the tribes. The antennæ are much stouter than usual.

Lissobracon forticornis, sp. nov.

Black, smooth and shining, the head, thorax, except the metanotum and the front legs rufous; antennæ stout, black, the scape sparsely haired, the flagellum bare. ♀.

Length 19; terebra 50 mm.

Hab. Matang.

Head sparsely haired; the metanotum covered with longish black hair; the femora sparsely, the tibiæ and tarsi thickly covered with black hair, as is also the sheath of the ovipositor. The apical abscissa of the radius is as long as the basal two united. Recurrent nervure almost interstitial; below it is a hyaline spot. Abdomen longer than the head and thorax united; its apex bluntly pointed, the hypopygium larger, projecting.

Trichiobracon, gen. nov.

Hind coxæ with a large, curved and a shorter, minuter, straighter spine in the middle above. Pobrachial transverse nervure in hind wings joined to the transverse præbrachial, roundly curved towards the apex of the wing but not reaching it; pobrachial nervure short, not reaching to the middle of the wing; from near its apex a stouter oblique nervure runs to the præbrachial, forming a large, closed cellule at the base of the pobrachial. Stigma large, the radius issuing from behind its middle. Transverse median nervure recived distinctly beyond the transverse basal; the recurrent nervure received in from of the 1st transverse cubital. Occiput and cheeks margined. Malar space large. Mesopleuræ with a distinct, crenulated furrow. Parapsidal furrows deep. Median segment large, closely reticulated; its sides at the middle of the apical slope with a small, but distinct, rounded tubercle. Basal segments of the abdomen closely longitudinally striated. Cerci long, slender. Legs short and stout; the metatarsus not much longer than the 2nd joint; cerci minute. Temples broad. Ovipositor projecting.

The abdomen is broad, not much longer than the head and thorax; basal segment broad; the other segments are broader than long; hypopygium short, vertex not much depressed.

This genus is allied to *Spinaria*. It may be identical with *Acanthobracon*, Szép; but the description of that author is too short to enable me to decide this. So far as the description goes Szepligeti's genus differs from mine in the 3rd abscissa of the radius not reaching to the apex of the wing and no mention is made of the pobrachial nervure in hind wings being roundly curved, directed downwards from the præbrachial towards the apex of the wing, not obliquely sloped, straight from bottom to top as usual. This nervure, in fact, has the appearance of being a 2nd cubital nervure and may not be the equivalent of the transverse pobrachial nervure. There is indeed, below the ordinary cubitus a longitudinal nervure which may be the pobrachial and the transverse nervure (which springs from shortly beyond its middle) may be the ordinary pobrachial transverse nervure. To put the matter in another way, above the anal cellule there are 2 large median cellules, the basal closed, the apical open—followed by the ordinary posterior cellule, also open below. I am not acquainted with any genus of *Braconidæ* having this peculiar neuration in the hind wings. If my genus be really identical with *Acanthobracon* it seems remarkable that its describer has not noticed the odd neuration.

Trichiobracon pilosus, sp. nov.

Luteous, the antennæ black; the wings to the transverse basal nervure yellowish-hyaline, beyond that smoky-fuscous, the stigma and apical nervures black. Legs coloured like the body, densely covered with long pale hair. ♀.

Length 10-11 mm: terebra 4 mm.

Hab. Kuching.

Antennæ as long as the body, black. Face and clypeus distinctly and closely punctured; the clypeus clearly separated from the face, which is raised and separated in the centre; both covered with long pale hair. Front and vertex smooth and shining, more sparsely haired than the face. Teeth of mandibles black. Pro- and mesothorax smooth and shining; the base of propleuræ irregularly reticulated, median segment reticulated except on the sides at the apex; the pleuræ more strongly reticulated than the rest. First abdominal segment slightly longer than its width at the apex, closely longitudinally striated; the 2nd and the 3rd segments to near the apex finely, closely longitudinally striated, as is also the 4th to the furrow; all the furrows striated.

Cendebeus, gen. nov.

Three cubital cellules. Recurrent nervure received in the 2nd cubital cellule, close to the 1st transverse cubital nervure;

transverse median shortly beyond the transverse basal; anal nervure interstitial; pobrachial nervure in hind wing interstitial; subcostal nervure distinct, curving down at the præbrachial nervure curving upwards again towards the costa. Occiput not margined. Temple wide. Mandibles short, broad, bluntly rounded at the apex, which is unidentate. Clypeus separated from the face. Middle lobe of mesonotum clearly separated; its base raised, its apex bounded by a transverse keel, mesopleuræ with a longitudinal furrow. Abdominal petiole of almost equal width throughout, about four times longer than wide, stout; 2nd segment with 2 furrows which convergeat towards the apex. Suturiform articulation obsolete. Legs of moderate size; the hinder coxæ twice longer than wide; spurs minute. Maxillary palpi long, at least 5-jointed. Antennæ long, slender. Stigma large, the radius originating behind its middle. Median segment large, rugose.

Belongs to the *Exothecini.*

Cendebeus filicornis, sp. nov.

Black, the scape of the antennæ pallid yellow; legs testaceous: the tibiæ broadly in the middle, the apices of the 4 hinder femora and the greater part of the fore tarsi, black; the wings hyaline, the stigma and nervures black; the ventral surface of the abdomen, the apices of the segments, narrowly, and the sides of the apical segments broadly testaceous; the base of mandibles dark testaceous. ♀.

Length 11; terebra 11 mm.

Hab. Kuching.

Front and vertex smooth and shining; the lower part of front irregularly transversely striated. Face closely rugosely punctured and thickly covered with white, longish pubescence; its middle shining above. Palpi white. Mesonotum closely, minutely punctured; the sutures irregularly reticulated; the depressed central apical part obscurely reticulated. Median segments closely rugosely punctured; the pro- and mesopleuræ shining aciculated. Mesopleural furrow smooth. First abdominal segment closely rugosely punctured, more coarsely at the base where the punctures run into reticulations; the 2nd finely and closely punctured, the central part bounded by the keels more strongly than the sides. Propleuræ in the middle thickly covered with fulvous, longish pubescence.

Habnoba, gen. nov.

Wings with 3 cubital cellules: the recurrent nervure received in the 1st cellule, almost interstitial. Stigma distinct; the radius issuing from shortly behind its middle. Transverse basal and anal nervures interstitial. Occiput and cheeks margined. Eyes oval. Malar space large. Anterior tarsi more than double the lenght of the tibiæ; the apical half of fore femora dilated. Mesonotum trilobate. Mesopleuræ with a distinct lonigtudinal furrow. Scutellum and metanotum depressed at the base. Abdominal petiole long and slender; striated, cylindrical; the other segments smooth, without furrows or depressions. Radial cellule in hind wings divided by an oblique nervure; the pobrachial nervure interstitial; the anal cellule is divided into two by a distinct oblique nervure shortly behind the middle.

Head cubital, its temples wide; malar space moderately large; ocelli in a triangle; the hinder coxæ fully four times longer than broad; calcaria short; claws small, simple. The 2nd abdominal segment is longer than the following 3 segments united; there is an indistinct suturiform articulation; the basal joint of the hinder tarsi is as long as the other joints united. Legs long and slender; the 1st abscissa of the cubitus is roundly curved and is not much shorter than the 2nd, but longer than the 3rd.

Belongs to the *Spathiinæ*. Allied to *Leptospathius* Szép.; which has a devided radial cellule in the hinder wings but not a divided anal cellule. Characteristic is the strong mesopleural furrow as in the *Cryptinæ*.

Habnoba petiolata, sp. nov.

Black: the head and the greater part of the prothorax rufous; the anterior coxæ dark rufous below; the basal joint of the 4 posterior tarsi to near the apex white. Wings hyaline, slightly infuscated, the nervures and stigma black. ♀.

Length 13-14 mm ; terebra 13 mm.

Hab. Kuching.

Antennæ longer than the body, slender, filiform, black ; the scape rufous, the basal joints of the flagellum dark rufous ; the 3rd joint shorter than the 4th. Face obscurely rugose, the centre slightly raised and separated from the sides which are smoother and more shining, clypeus clearly separated, raised, broadly rounded behind. Face and clypeus thickly covered with fuscous hair ; the hair on the clypeus longer than that on the face. Mandibles rufous, black at the apex ; the long palpi fuscous, the apical joints paler. Middle lobe of the mesonotum irregularly reticulated ; the furrows irregularly striated. Scutellum shining, minutely and closely punctured ; the basal region depressed and with a fine keel in the middle. Post-scutellum depressed, keeled laterally. Metanotum smooth and depressed at the base, irregularly transversely striated and with some irregular longitudinal keels. The centre and the apex of the propluræ strongly irregularly striated ; the oblique furrow on the base and the lower longitudinal one stoutly striated ; the base of the metapleuræ shagreened ; the rest stoutly reticulated. Pleuræ and sternum thickly covered with silvery pubescence. Petiole closely, distinctly transversely striated. On the base of the 2nd segment is a raised area, longer than broad, slightly narrowed towards and rounded at, the apex ; the rest of the segment finely, longitudinally striated. Legs covered with a pale pubescence ; the tarsi spinose ; the hinder coxæ and trochanters minutely punctured ; the front legs have the femora and tibiæ piceous in front. Sheaths of ovipositor black, covered with a soft microscopic pubescence.

Ediya, gen. nov.

Recurrent nervure received shortly beyond the middle of the 1st cubital cell, transverse basal nervure shortly beyond the transverse median : anal nervure not interstitial. Radial cellule in hind wing bordered by a distinct nervure in front ; præbrachial nervure not interstitial above or below; the pobrachial transverse nervure received considerably in front of it; the pobrachial continued to the end of the wing; the pobrachial cell narrow at the base, much widened at the apex. Hind femora not much thickened, serrate beneath. Labrum projecting. Mandibles curved, with a short subapical tooth. First abdominal segment wide at the base, becoming wider towards the apex, as long as the 2nd and 3rd segments united. Thorax in ♂ longer than the abdomen; the pro- largely developed.

The head is cubital; the clypeus clearly separated from the face; the front depressed, its sides keeled; metanotum areolated. Mesopleuræ furrowed below. Metatarsus shorter than the other joints united. Calcaria and claws small.

Comes near to *Euseelmus* (also from Sarawak) but that genus may be known from it by the hind femora being thickened, by the recurrent nervure being received in the 2nd, not in the 1st cubital cell, and by the shorter thorax.

Edyia annulicornis, sp. nov.

Black, shining, the middle of the antennæ broadly, labrum, almost the basal half of the hinder tibiæ and the hinder tarsi white; the 4 front legs white, their femora with a slight fulvous tinge, their coxæ black, with a brownish tinge; wings hyaline, the stigma fuscous, the nervures darker. ♂.

Length 9 mm.

Hab. Kuching.

Face coarsely rugosely punctured, its sides irregularly longitudinally striated; clypeus more finely longitudinally punctured; front and vertex smooth, the frontal depression bordeded by a stout, oblique keel. Pronotum stoutly, irregularly striated. Middle lobe of mesonotum strongly punctured and thickly covered with white hair, its apex irregularly reticulated; it is raised and clearly separated; the lateral lobes are sparsely punctured. Scutellum punctured on the basal half; its basal depression with a straight central keel, with an oblique one on either side. Post-scutellum with a stout keel down the centre and a stout transverse one across the middle, dividing it into 4 parts. Metanotum areolated irregularly reticulated, the areæ longer than broad. Mesopleuræ smooth, punctured above and below. Metapleuræ closely rugose. Basal segment of abdomen irregularly longitudinally striated. The hinder femora are serrate beneath in the middle, the teeth not being well developed.

Enagathis erythrocephala, sp. nov.

Black, the scape of antennæ, head, pro- and mesothorax red, the fore legs of a less clear red, the middle coxæ from near the base, trochanters and femora, fuscous-black, the rest of the legs of a dark red; wings fuscous-violaceous, paler on the costal cell, the nervures and stigma black, ♀.

Length 8-9 mm; terebra 1 mm.

Hab. Kuching. January.

Scape of antennæ covered with white, the flagellum thickly with stiff, pubescence. Front and vertex smooth; a curved oblique furrow above each antenna. Face distinctly punctured, roundly dilated in the middle; the clypeus less strongly punctured, deeply foveate at the sides. Mandibles rufous, palpi rufo-testaceous. Prothorax impunctate; the mesothorax punctured, but not closely or strongly, the scutellum more strongly punctured; scutellar depression deep, with 2 stout keels in the centre; scutellum roundly convex, with a bordering keel on its apex below; post-scutellum bordered by a stout keels and with a stout one in the centre. In the centre of the metanotum, at the base, is an area, fully twice longer than wide, transverse at the apex, gradually narrowed towards the base, with the keels curved; outside this is another area of nearly equal width; on the sides are some irregular striæ, especially at the apex. The apical slope is bordered above by a keel and has a few stout longitudinal keels. The long spur of the middle leg is nearly as long as the basal joint of the tarsi. Abdomen smooth and shining.

Apart from the difference in colouration, etc., this species may be known from *E. creophora* by the long spur of the middle tibiæ. In the latter species it is short as usual.

Enagathis creophora, sp. nov.

Black, the head, the fore legs, pro- and mesothorax red; the wings dark fuscous, the stigma and nervures black; the metapleuræ thickly covered with white pubescence. ♀.

Length 10, terebra 1 mm.

Hab. Kuching.

Scape of antennæ obscure reddish below. Head smooth and shining, the face and clypeus thickly covered with fuscous pubescence. Middle lobe of mesonotum distinctly raised, but not separated by furrows from the lateral. Scutellum with a distinct, raised margin, which is highest at the apex; the keels are bordered, on the inner side by a furrow, which, at the apex, has a few indistinct keels. Post-scutellum opaque, strongly aciculated, flat, transverse at the base, roundly narrowed towards the apex. On the base of the metanotum is a curved obliquely depressed rounded area, with its middle triangularly bent inwardly; next to this are 7 areæ, all longer than wide, the central of equal width and twice longer than wide; the outer still longer, the apical slope is oblique, surrounded by a stout keel; in its centre is an area which becomes slightly narrowed towards the apex; at the sides is an area of equal width throughout; on either side of the central area is a keel which only extends to the middle. Pro- and mesopleuræ smooth; on the centre of the meso- on the lower half is an oblique row of long, stout keels; the apical furrow is crenulated; on the base of the metapleuræ are 3 stout keels. Tarsi thickly covered with short stiff hair. The 1st transverse cubital nervure is straight and sharply oblique; the 2nd is much shorter, not oblique, roundly curved; the recurrent nervure is bullated near the top.

This may be *E. pilosus* Szép.; but the 25 words of that author's description, dealing mainly with the colour, are not sufficient for identification. In my species the 4 front claws are bifid; the hinder subbifid, the basal claw being short. There is no branch on the 2nd transverse cubital nervure, but it is thickened in the middle.

Agathis malayana, sp. nov.

Luteous, the antennæ and the hinder tibiæ and tarsi black; the 3rd and following segments of the abdomen blackish; the apex of the wing from the transverse basal nervure fuscous, the base above to the transverse basal and below to near the commencement of the anal nervure, hyaline, the apex of the hind wings broadly fuscous. ♀.

Length 7-8 mm.

Hab. Singapore.

A small curved depression at the outerside of the hind ocelli. Head, pro- and mesonotum smooth and shining; the middle lobe of mesonotum with 2 wide, shallow furrows near the middle a shallow, wider one on the lateral lobe. Scutellum distinctly, but not very strongly, punctured; its sides and apex margined, the apex more strongly keeled. Post-scutellum depressed, stoutly margined. Base of metanotum with a wide area in the middle at the base; its bounding keel roundly curved and curved towards the apex in the middle; behind this are 6 areæ, in 2 rows of which the outer apical are the larger; these are bordered by a keel which is angled outwardly in the middle; and the sides, outside the spiracles, are bordered by a stout keel. Pro- and mesopleuræ almost impunctate, there is a narrow straight oblique keel above the middle of the latter; its curved apical keel is wide, bears some stout keels and commences shortly below the middle; the apical depression bears stout keels, as does also that on the base of the metapleuræ. Areolet triangular, the nervures uniting at the top, they are straight and oblique, except the 2nd which is narrowed and not so oblique below; there is no branch on the 2nd cubital nervure; the recurrent nervure is distinctly interrupted above.

Disophrys ornatipennis, sp. nov.

Black, the head, except the front, the vertex and occiput broadly in the middle, pronotum, upper half of propleuræ, the centre of the mesonotum between the sutures and scutellum; the scutellum and adjoining region, metanotum, except a broad curved band on the top of the apical slope, the upper part of the mesopleuræ and the metapleuræ, except in the middle, reddish-yellow. Four front legs luteous, the hinder black, the coxæ, trochanters, femora and tibiæ luteous, below. Ventral surface of abdomen for the most part testaceous; the base above testaceous, stoutly tuberculate laterally. Fore wings to the base of the cubitus, the 1st cubital cellule broadly above yellowish-hyaline the rest blackish-fuscous; with a curved hyaline cloud in front of the recurrent nervure; the basal half of the hind wings yellowish-hyaline, the rest fuscous, the apical cloud prolonged obliquely backwards below; the stigma black, yellow at the base. Antennæ black, brownish towards the apex. ♂.

Length 12-13 mm.

Hab. Matang. August.

Face minutely punctured, the centre from near the top bordered by furrows, which end in foveæ above the clypeus which is minutely punctured. Labrum large, broadly rounded. Front depressed in the middle, the depression bordered by furrows, which are roundly curved above, converging below; the lateral keels reach to the ocelli. Parapsidal furrows wide, bearing stout keels, forming deep foveæ; at the apex they converge, but do not unite. Apex of scutellum with a transverse stout keel. Metanotum depressed at the base, the sides more deeply than the centre; at the apex of the depression is an area, longer than wide, which becomes gradually wider to the apex, which is transverse and bears a stout transverse keel; following this is a depression about 3 times wider than long, rounded, but not much narrowed, at the apex and bordered by larger, longer depressions, wide at the base, becoming narrowed gradually to a point at the apex and touching the curved keel surrounding the apex; outside it are 2 larger wider depression, the outer being the larger. Pleural and sternal depressions wide and bearing stout keels all over.

Disophrys niger, sp. nov.

Black; the palpi and anterior tarsi pale testaceous, the wings black to the areolet, the rest milk-white, the apex of stigma and apical nervures pale yellow. ♂.

Length 8 mm.

Hab. Kuching. March.

Smooth and shining, the median segment irregularly areolated. The furrow in the centre of the edge of the mesonotum crenulated; scutellar depression large and deep, with 3 stout keels, the central slightly higher than the lateral. Scutellum flat, narrowed obliquely towards the apex, which is keeled; post-scutellum hollowed, the sides stoutly keeled, slightly obliquely narrowed towards the apex, the centre being transverse. The central basal area of the metanotum is large, about twice longer than wide, and rounded at the apex. On the base of the mesopleuræ in the middle are 5 stout, irregular keels, the space between them being depressed; below them, and placed obliquely, are 3 large foveæ, the apical being the larger. Metapleuræ with 3 stout curved keels, which have some oblique keels at the base, and on the upper and lower parts, these forming irregular areæ; the apex is bounded by a stout keel. Abdomen smooth and shining; the basal 2 segments distinctly margined laterally, the 2nd with a transverse curved furrow in the middle.

The lateral keels on the front are large and raised below, becoming narrowed above and do not reach to the ocelli; in the centre of the front are 2 stout keels which converge above, and are dilated at the base of the antennæ. Areolet longer than broad; its basal nervure with a distinctly oblique slope. Scape of antennæ about 3 times longer than wide. There is no appearance of a stump on the 2nd transverse cubital nervure.

Disophrys fumipennis, sp. nov.

Luteous, smooth and shining, the flagellum of antennæ and the hind tibiæ and tarsi, black; wings fuscous, highly iridescent, the base from the transverse median nervure and an oblique cloud, extending from the base of the stigma to the anal nervure, hyaline; the stigma and nervures black. ♀.

Length 7-8; terebra 1 mm.

Hab. Kuching. October.

Face and clypeus sparsely punctured and covered with white pubescence, the front and vertex smooth and shining; the centre of the face above is roundly incised, the incision longer than wide and with its sides projecting above. The raised central lobe of the mesonotum is widely furrowed on the basal half. Scutellar depression large, deep and with a stout keel in the middle. Scutellum with the sides and apex keeled, the latter more strongly than the former. Post-scutellum as wide as the scutellum, depressed at the base, roundly raised, its sides keeled. Base of metanotum with a large, somewhat semicircular area; behind this are 5 areæ; the central with stouter keels and slightly narrowed towards the apex, the outer obliquely narrowed towards the apex, almost triangular; the apex has an oblique slope and is bounded by keels on the top and sides, there being none in the centre. Pleuræ almost impunctate; the oblique furrow on the lower apical part of the mesopleuræ is shallow; and has a few obscure keels; on the lower side of the metapleuræ in the middle is a large projecting plate, dilated at the base, rounded at the apex and hollowed in the centre above. Areolet rounded and narrowed above; the 2nd transverse cubital nervure has a short, stout branch above the middle; the recurrent nervure is interrupted at the top and above the middle leaving a small isolated piece.

Microdus natangensis, sp. nov.

Rufous-luteous, the flagellum of antennæ blackish; wings yellowish-hyaline, the nervures and stigma luteous, the latter black at the base, where there is a small equare fuscous cloud, extending shortly beyond the cubitus; the basal three abdominal segments closely longitudinally striated, the 2nd with a transverse, slightly curved, furrow shortly beyond the middle. ♂.

Length 13 mm.

Hab. Matang

Head, pro- and mesothorax smooth and shining; parapsidal furrows smooth. Base of metanotum depressed; in the centre are two keels, which are close together on the basal third, then expand obliquely outwardly, then running straight to the apex. Abdominal petiole smooth and obliquely depressed at the apex, the middle is depressed.

ICHNEUMONIDÆ.

TRYPHONIDES.

Bentyra, gen. nov.

Median segment deeply depressed at the base; there is one transverse keel, behind which the segment is closely transversely striated; the spiracles small, oval. Areolet absent; the transverse basal nervure interstitial; disco-cubital nervure broken by a stump. Parapsidal furrows deep; a wide, deep depression at the base of the scutellum. A deep, oblique furrow on the basal half of the mesosternum. Eyes large, temples and malar space small. Clypeus roundly convex, not separated from the face; its apex minutely bituberculate. Mandibles stoutly bidentate, the teeth of equal size. Petiole stout, becoming gradually wider towards the apex; the spiracles are placed shortly beyond the middle. The middle segments are depressed at the base; the last is longer than the preceding; the ovipositor projects.

Radial cell wide in the middle, compared with its length; the basal and apical abscissa straight, sharply oblique; occiput margined, a deep furrow between the keel and the ocelli; the head is large and is distinctly wider than the thorax; there are 2 spurs on the 4 hind legs; on the front tibiæ the spurs there is one, cleft from near the base, the one tooth being broad, stout, the other more slender; claws small, simple; the long spur of the hind tibiæ does not quite reach the middle of the metatarsus; in the hind wings the transverse median nervure is broken distinctly below the middle. Middle lobe of mesonotum widely separated from the scutellum furrowed down the middle. Antennæ long and filiform, the basal joints of flagellum greatly lengthened.

Belongs to the *Tryphonidæ*, a group which appears to be rare in the tropics.

Bentyra striata, sp. nov.

Black, abdomen rufous, the face, except for a brown line in the centre, the inner eye orbits somewhat broadly, the line extending on to the hinder edge of the eyes, a broad line on the pronotum, one on the basal half of the middle lobe of the mesonotum, 2 shorter ones on its apex on the lateral lobes, scutellums, the apex of the median segments, the mark roundly dilated backwards in the middle, the lower edge of the propleuræ, an irregular mark under the hind wings and a large mark an the lower apical half of the metapleuræ, bright yellow. Legs rufous, the anterior paler; the 4 front coxæ and trochanters yellow; the hinder coxæ black, with a large yellow mark on the apex above; the apex of the hinder tibiæ black; the hinder tarsi infuscated. Wings hyaline, a small fuscous cloud near the centre of the radius and cubitus, the stigma and nervures black. ♀.

Length 7 mm.

Hab. Kuching.

Antennæ slender, longer than the body, fuscous; the scape obscure yellow beneath. Face and clypeus closely, transversely punctured; the front and vertex closely obliquely striated; the front with 2 stouter longitudinal keels down the centre. Meso- and metanotum closely, finely transversely striated. Upper part of propleuræ closely obliquely striated, the lower smooth, the upper part of meso- closely longitudinally striated, the lower closely rugose; upper half of meta- coarsely obliquely striated, the lower distinctly punctured.

PIMPLINA.

Epirhyssa spiloptera, sp. nov.

Black, the face, clypeus, inner orbits to the top, the outer more broadly (but narrowly above) from near the top, malar space, the upper side, apex, lower side, except in the middle of the prothorax, scutellum, except at the apex, post-scutellum, the median segment except at the base, apex and lower side of pleuræ, the meso-, except at the base, below the tubercles and a large curved mark, with a narrow oblique pedicle below the latter, mesosternum, a longish mark, becoming gradually wider towards the apex, which is transverse on the 1st, a somewhat similar mark on the 2nd, but with its apex transverse, not rounded and with the sides at the apex projecting; a band near the apex of the 2nd and following segments, the lines dilated and turned backwards below along the sides, yellow. Legs yellowish, the fore femora above, the middle at the base below and more broadly above, the hinder, except at the apex, the base of the hind tibiæ, and the 4 hind tarsi, black. Wings hyaline, the apex from the transverse cubital to shortly beyond the apex of the cubitus fuscous-violaceous; the stigma testaceous, the nervures black. ♀.

Length 18 mm.; terebra 33 mm.

Kuching. October.

Apex of clypeus roundly incised. Scutellum transversely punctured; its black apex longitudinally, coarsely striated. Median segment closely punctured; the metanotum with a smooth furrow down its centre. Propleuræ almost smooth, the meso- closely punctured. Abdomen smooth; the black on the middle segments has a brownish tinge.

Epirhyssa maculiceps, sp. nov.

Black, the face, except for an irregular bell-shaped mark in the centre, a mark on the front, longer than wide, clypeus, labrum, inner orbits to the hind ocelli, the outer from near the top, malar space, pronotum, 2 curved marks, narrowed at the apex, on the middle lobe of the mesonotum at the base, a broad line on the inner side of the lateral lobes, one along their outer edge, scutellum, except at the apex, its keels, the depressions at the sides of the post-scutellum, the lower edge of the propleuræ, mesopleuræ, except in the middle at the apex, median segment, except for a large conical mark on the apical two-thirds of the metanotum and the apices of the abdominal segments, broadly yellow. Legs yellow, the tibiæ and femora suffused with fulvous; the inner and lower side of the hind coxæ black; the hind tibiæ in front, except in the middle, their apex all round and the hinder tarsi blackish. Wings hyaline, clouded at the apex from the transverse cubital nervure; stigma fuscous, the nervures blackish. ♀.

Length 12; terebra 13 mm.

Hab. Kuching. March.

Antennæ fuscous-black. Face and clypeus closely punctured, the centre of the face obscurely striated; the front and vertex smooth. Scutellum rugosely punctured, its apex transversely striated. Median segment sparsely covered and the abdomen thickly covered with white hair; the middle segments closely punctured. Tarsi spinose.

Xanthopimpla Kuchingensis, sp. nov.

Luteous, the vertex and the lower part of the front broadly in the centre, the occiput between the eyes, a large mark on the mesonotum in front of the tegulæ, squarely dilated in the centre at the base, with the sides rounded, a mark on the scutellar depression, the 2 basal lateral areæ, the areola narrowly at the base, a large mark, slightly, but distinctly broader than long, on the 1st abdominal segment, a large, transverse mark, slightly incised in the middle of the apex, on the 2nd and 3rd, 2 large marks, obliquely narrowed, on the innerside, 2 widely separated marks on the 4th and 5th (that on the 5th less distinct), black. Antennæ black, the scape obscure yellow, the flagellum brownish below. Areola large, its basal part obliquely narrowed, the slightly shorter apical slightly narrowed, the apex transverse; the 2 basal areæ are slightly wider; the 2nd a little widened towards the outerside. Areolet 4-angled, shortly appendiculated; the recurrent nervure is received between the middle and apex. ♀.

Hab. Kuching. August.

Xanthopimpla claripennis, sp. nov.

Luteous, the ocellar region, a broad band, roundly curved in front, more transverse behind, near the base of mesonotum, a broad band across the base of the metanotum, a large mark, roundly dilated at the apex, roundly contracted at the base, on the centre of the 1st segment an irregular spot, wider than long and narrowed on the outerside on the 2nd, a large, oblique mark, rounded laterally, widely contracted in the centre at the base and more narrowly at the apex, on the 3rd, a small mark (but wider and more regular than the small mark on the 2nd) on the sides of the 4th, a large, regular transverse fully twice wider than long one on the 5th, a small mark (the smallest of the series) on the sides of the 6th, 2 large marks, narrower, but thicker and narrowed roundly on the innerside, on the 7th, and 2 marks, transverse on the outerside, narrowed roundly on the inner, on the 8th, black. Legs of a paler yellow than the body, a large black line on the under side of the 4 hinder femora, the base behind of the 4 hinder tibiæ and the 4 hinder tarsi, black. Wings clear hyaline, the nervures and stigma black; the areolet oblique, triangular, shortly appendiculated. The areola is large, longer than wide by about one-fourth; its apex transverse, slightly, but distinctly, narrowed from shortly beyond the middle to the base; the basal lateral area is large, dilated at the base, the 2nd is wider than long, with straight sides, and of equal width throughout. Antennæ black. The recurrent nervure is almost united to the 2nd transverse cubital.

Length 8-9; terebra 2 mm.

Hab. Kuching, April.

Echthromorpha robusta, sp. nov.

Black, head, except the occiput broadly, the centre of the vertex and front, scutellums, 2 short marks on the base of the mesonotum, a large, curved mark on the sides of the metanotum, reaching to near the base, extending on to the pleuræ, in front of and behind the spiracles, tubercles, a large, irregularly semicircular mark on the basal half of the mesopleuræ, a small oblique one on the apex below, the apices of the abdominal segments—the basal band broader than the others, which are narrowed in the middle,—lemon-yellow. Legs similarly coloured, the hind coxæ broadly below, an oblique broad line, expanded at the apex, above, a long broad line on the innerside of the hind femora and a narrower one on the outer, the base of the tibiæ and the hind tarsi, black. Wings hyaline; the nervures and stigma black; the apical cloud dark violaceous. ♀.

Length 17 mm.; terebra 5 mm.

Hab. Matang.

Mesonotum distinctly, but not strongly or closely, punctured; the 2nd and following segments of abdomen closely and distinctly punctured, the basal smooth and shining; pedicle of areolet more than half the length of the 2nd transverse cubital nervure.

This is a more robust species than *E. maculipes*; its thorax is much less strongly marked with yellow, the 2 yellows lines on the mesonotum only being present at the base, the basal mark on the mesopleuræ is smaller and not reaching to the lower edge, the sternum is black, and the pedicle of the areolet is longer.

Echthromorpha maculipes, sp. nov.

Black, the face, clypeus, orbits, the yellow below the ocelli expanding inwardly, this contracting the black mark in the centre of the front; the lower outer orbits entirely, malar space, 2 lines on the mesonotum, expanded outwardly at the base, scutellums, the keels running from them, the metanotum except for a large black mark in the centre, its basal half broader than apical and becoming gradually, rounded narrowed to the apex; the apical half becoming slightly gradually wider to the apex; on the sides a broad line runs to the spiracles; propleuræ black, yellow at the base; mesopleuræ yellow, its base, a band under the tubercles, the top, a large band on the apex, irregularly, slightly incised at the base and apex, where it joins the black on the mesosternum, thus having a large mark, narrowed and rounded at the apex, on either side and reaching shortly beyond the middle. Metapleuræ yellow, its base black to near the bottom. All the abdominal segments lined with yellow; the 1st broader and the last narrower than the others; the others slightly narrowed in the middle. Wings hyaline, with a slight fulvous tint; the nervures and stigma black; the usual apical cloud has a violaceous tinge. Legs yellow; the hind coxæ broadly, irregularly black below and laterally; above, and joined to the lower black mark, is a black mark, which becomes gradually wider towards the apex and extending from there to the base; there is a large broad black band on the upper innerside, a narrower ore on the outer, the two almost uniting at the apex, a large band in the centre below and the base of the hinder tibiæ, black; the hind tarsi black, fuscous at the base. Scape yellow below.

Mesonotum distinctly punctured, the punctures clearly defined and separated; the 2nd and following abdominal segments closely and distinctly punctured.

Length nearly 15; terebra nearly 5 mm.

Hab. Kuching. June.

OPHIONINA.

Pleuroneurophion malayanus, sp. nov.

Dark luteous, the apical half of the abdomen darker coloured, the face, clypeus and orbits pallid yellow; the mesosternum blackish; wings hyaline, the nervures and stigma blackish. ♀.

Length 20 mm.

Hab. Borneo.

Head smooth, shining and almost bare. Mesonotum darker coloured than the scutellum, closely, minutely punctured. Sides of scutellum keeled, the keels becoming indistinct towards the apex which is broadly rounded; the base obscurely punctured, the rest not very strongly or regularly longitudinally striated. Post-scutellum broader than long, projecting, rounded from the base to the apex. Base of metanotum smooth, the basal depression stoutly, but not closely striated; the rest closely, stoutly, irregularly transversely striated and reticulated, the sides with a bordering keel. Pro- and mesopleuræ closely, minutely punctured and covered with a fine down; the upper part of the meta- stoutly, obliquely irregularly sriated. The basal abscissa of the cubito-disco-nervure is slightly curved upwards at the base, slightly, but more distinctly, downwards at the apex before the angle which is distinct but does not bare a stump of a nervure. Cubitus in hind wings roundly curved. The part of the cubito-disco nervure before the angle is distinctly shorter than that between it and the recurrent nervure.

This species differs from *P. grandis* in the disco-cubital nervure not being angled before the middle, but otherwise it agrees with the main features of the genus, *e. g.* in the transverse median nervure being received behind the transverse basal, in the radius being thickened at the base and in the transverse median nervure in hind wings being broken below the middle. In both species the recurrent nervure is received directly opposite to the base of the basal abscissa of the radius.

Pleuroneurophion grandis, sp. nov.

Luteous, the head paler, apex of abdomen darker, pro- and mesothorax closely punctured; scutellum, except at the base, irregularly transversely striated, its keels curved inwardly at the apex, which is transverse, the basal depression with a stout keel in the centre; the post-scutellum is separated from it by a deep furrow, its side being oblique; the post-scutellum has an oblique slope towards the apex and is bordered by straight keels. Basal depression of metanotum large, deep; there is a central keel and the apex is stoutly irregularly. striated; the part behind the keel is closely, minutely punctured; the rest irregularly, strongly transversly reticulated; metapleural keel stout, roundly curved at the apex. Disco-cubital nervure roundly, broadly, not acutely angled before the middle; there is no trace of a stump of a nervure. The basal 2 segments of the abdomen are as long as the head and the thorax united. The cubitus in the hind wing is straight, not curved at the base and apex; the apical abscissa is the longer and is not sloped like the basal. The part of the disco-cubital nervure behind the angle is slightly longer than that between it and the recurrent nervure.

This is one of the largest species. Himalayas.

Eniscospilus nigropectus, sp. nov.

Luteous, the middle of the abdomen paler, the mesonotum, mesopleuræ, mesosternum and the apical 3 segements of the abdomen black; wings hyaline, the nervures and stigma black; there is only one horny point; it is longer than broad, conical, transverse at the apex, rounded and narrowed behind. ♀.

Length 17 mm.

Hab. Kuching.

Head smooth and shining, the ocellar region black. Behind and above the curved keel on the mesopluræ are stout keels, which become gradually longer below, the lower ones reaching beyond the middle of the mesopleuræ. Scutellum stoutly keeled laterally its apex with 3 or 4 irregular, curved keels. Post-scutellum keeled. Metanotum behind the tranverse keel smooth, stoutly irregularly, mostly longitudinally striated, the striæ in places forming almost reticulations, especially at the sides; metapleuræ above irregularly reticulated. Transverse median nervure interstitial; disco-cubital nervure roundly curved; first discoidal cellule distinctly shorter than the second, the recurrent nervure being received about 4 times its length behind the transverse cubital, its base not half the length of the apex.

Trichonotus, gen. nov.

Hind wings with the cubital nervure unbroken; disco-cubital nervure not interstitial with the discoidal; 3rd discoidal cellule not narrowed at the base; 2nd nearly twice as wide at apex as at base. Labrum hidden. Chypeus projecting, narrowed and rounded at the apex. Thorax thickly covered with long pubscence, the mesonotum reticulated, scutellum distinctly keeled laterally. Median segment produced at apex, depressed at base; petiole dilated above at apex. Claws minute, simple. Hind tibiæ longer than tarsi. Recurrent nervure received beyond transverse cubital, the transverse median shortly beyond transverse basal. Basal joint of hinder tarsi not thickened, slightly longer than the other joints united.

Comes close to *Atrometus* Foer. The characteristic features are the unbroken transverse median nervure in hind wings, the large, flat, keeled scutellum, the petiole dilated above and the longish hinder tibiæ compared with the tarsi.

Trichonotus reticulatus, sp. nov.

Black, the head and thorax densely covered with grey pubescence; the face, inner orbits, the lower outer, scape of antennæ and tegulæ, lemon-yellow; the sides and lower part of petiole yellow; the upper part behind the dilated apex dark rufous, the top of the 3rd pale yellow, the apices of the others testaceous. Four front legs, hinder coxæ, apical joint of trochanters and the basal three-fourths of hinder tibiæ, yellow; the rest of hind legs black, with the femora rufous beneath. Wings hyaline, stigma dark testaceous. ♀.

Centre of face irregularly, longitudinally striated, base of clypeus irregularly punctured. Mesonotum strongly reticulated. Sculpture of scutellum hid by the dense hair. Metanotum irregularly reticulated, the pubescence dense, long and pale golden. Pro- and mesopleuræ stoutly, longitudinally striated; the meta- reticulated.

XORIDES.

Cænostoma, gen. nov.

Wings without an areolet, the recurrent nervure received shortly before the cubital; the transverse median behind the transverse basal. Cubital nervure in hind wings broken below the middle. Clypeus depressed, its apex broadly rounded. Labrum large, as long as the clypeus, broadly rounded at the apex and slightly narrowed above. Mandibles edentate, becoming narrowed towards the apex, which is bluntly rounded. Apex of face obliquely raised, with a fovea on either side of the middle. Thorax about 4 times longer than wide; the middle lobe of mesonotum clearly separated; scutellum flat, deeply bifoveate at the base; post-scutellum bifoveate. Median segment longer than broad, reticulated, its apex transverse and with a large tubercle on either side of the apex. First segment of abdomen fully 4 times longer than wide, as long as the 2nd and 3rd segments united; narrowed at the base, the spiracles placed shortly behind its middle; a curved depression before its middle; triangular depression—sharply printed at the base—on the 2nd and a shorter, rounded one on the 3rd segment. There are 8 abdominal segments. Four front legs slender, of moderate length; the middle coxæ longer than usual and longer than the anterior; the hinder legs much stouter and longer; the coxæ about 4 or 5 times longer than wide; the trochanters half their length; femora stout, the tibiæ as long as the trochanters and femora united; the metatarsus as long as the other joints united; claws small. Antennæ filiform, bare, longer than the body, the 3rd and 4th joints equal in length; the scape globular, not much longer than broad. Disco-cubitus not broken by a nervure.

I only know the ♂ of this genus of *Xorides*. The front tibiæ are not inflated as in many of the genera of the group. Its affinities are clearly with *Spiloxorides;* but that genus has the median segment areolated, not reticulated, much shorter and not tuberculate laterally at the apex, its hinder coxæ much shorter and the basal joint of the hinder tarsi is shorter than the other joints united, being not much longer than the 2nd and 3rd united.

Cœnostoma filicornis, sp. nov.

Black, labrum, clypeus, orbits broadly, the edge of the pronotum, scutellum, the 4 front legs, the basal two-thirds of the hinder tibiæ and the hinder tarsi, yellow; the hinder coxæ and femora rufo-testaceous; the extreme base of the hinder coxæ, their apical third, trochanters, base of tibiæ narrowly and their apical fourth, black; the apices of all the abdominal segments banded with yellow; wings hyaline, the nervures and stigma black, the base of latter white. ♂.

Length 13-14 mm.

Hab. Kuching.

Face closely punctured, obscurely, closely transversely striated above; front and vertex smooth and shining. Middle lobe of mesonotum raised, transversely striated; the apex at the scutellum with 3 longitudinal striæ. Scutellum smooth; its basal foveæ large wider than long; post-scutellum with 2 longer than wide foveæ. The reticulations irregular, much longer than wide. Propleuræ smooth, the meso- shagreened and thickly haired, the meta- closely reticulated. Base of petiole smooth; in the centre are 2 narrow keels with a keel on either side, the rest closely, irregulary reticulated; the 2nd segment is punctured at the base, with the furrows and depressions closely striated; there is a curved furrow. On the apex of the 1st segment, behind extending to the sides and having the yellow apical band prolonged along its sides; the apex of the segment is roundly dilated in the middle; the 2nd and 3rd are raised in the centre, depressed behind the raised part.

Spiloxorides erythrocephalus, sp. nov.

Black; the head dark red, the vertex marked with black; the last abdominal segment white above; the 4 front legs red; the middle pair darker; the basal joints of antennæ dark red; wings hyaline, a broad band along the transverse basal and transverse median nervures and a shorter one along the transverse cubital, extending into the radial cellule and along the innerside of the recurrent nervure; the nervures and stigma black. ♂.

Length 10 mm.

Hab. Kuching. October.

Antennæ longer than the body, densely covered with longish, stiff, outstanding hair. Face covered with stout, curved, transverse striæ, the apex with a transverse furrow, clypeus and labrum almost smooth. Mandibles rufous, black at the apex. Vertex smooth, the front closely, transversely striated, the striæ on the sides oblique. Middle lobe of mesonotum raised, clearly separated, its base with a stout transverse keel, which projects at the sides; its apex stoutly, irregularly reticulated; the furrows—parapsidal and lateral—crenulated. Basal depression of scutellum deeply bifoveate. Scutellum smooth, its sides keeled at the apex. Post-scutellum keeled laterally. The base and apex of the metanotum distinctly, transversely striated; the striæ distinctly separated; it is areolated; there is a central area, which, at the base, is narrow and of equal width, then becomes wider, with the sides bulging roundly outwardly; the posterior part is closely transversely striated. Pro- and mesopleuræ smooth; the meta- coarsely, irregularly reticulated. First segment of abdomen rugosely punctured; the 2nd is more finely rugose, the others smooth; the basal segments are fringed with white hair and their depressions are striated; the other depressions smooth.

Cyancoxorides rufomaculatus, sp. nov.

Blackish-blue, the thorax, except the mesonotum, scutellums and the central area of the metanotum, rufous; the head deep black, the face, the edge of the inner eye orbits to the ocelli, the line roundly narrowed above and below and the lower half of the outer orbits broadly pale yellow; the base of the 1st abdominal segment, a longish mark, its basal third becoming gradually wider, then becoming narrowed again to the apex, which is, like the base, rounded; there is a similarly shaped white mark, but much shorter and broader, on the apex of the 2nd segment, the apices of the other segments are narrowly banded with a clearer white colour. The 4 front legs and the hinder coxæ are coloured like the thorax; the middle tibiæ are paler in front and fuscous behind; the basal and apical joints of the middle tarsi black, the middle white; the hind trochanters, femora, tibiæ and apical joint of tarsi, black, with a blue tint; a line near the base of the tibiæ and the tarsi, white. Wings clear hyaline, the nervures and stigma black; the latter with a white band at its base. ♀.

Length 18 mm.; terebra 16 mm.

Kuching, June.

Face closely punctured, its apex curved roundly and obliquely depressed, reddish, as is also its centre and the clypeus. Front and vertex smooth, shining; and with purple tints. Mandibles black, rufous at the base. Mesonotum closely, minutely punctured; its central part in the middle closely reticulated; the middle at the apex with some stout, curved longitudinal keels. Apical slope of scutellum irregularly striated. Post-scutellum stoutly keeled laterally and there is also a central keel. Metanotum strongly, irregularly striated; the black central area is stoutly, irregularly reticulated. Pro- meso- and the lower half of metapleuræ smooth; the upper half of metapleuræ irregularly punctured at the base, the apical half irregularly obliquely striated; this part is bordered below by a distinct and above by a less distinct, longitudinal keel; on the apical slope are 6 areæ in 2 rows, the basal areæ being the larger. Basal 3 segments of abdomen closely, minutely punctured; the depressions and furrows closely, striated; the first segment, between the keels, more strongly and irregularly transversely striated.

This species may form the type of a new genus, when more species of this group are available for study. The areola is not contracted, but is of equal width throughout, the labrum is not obliquely depressed, the body wants the distinct metallic blue texture, and the wings are not spotted.

Cyanoxorides cæruleus, sp. nov.

Blue, the 5th abdominal segment white above; the legs bronzy black, the femora brighter in tint; the front legs testaceous especially anteriorly; the hinder coxæ rufous; antennæ black, covered with short, stiff black pubescence; the middle with a broad white band; wings hyaline; a fuscous band along the transverse median and the lower half of the transverse basal and a broad band, extending from near the base of the radial cellule to shortly beyond the transverse cubital and recurrent nervures; the stigma and nervures, black, the former with a white spot at the base. ♀.

Lenth 13-14; terebra 8 mm.

Hab. Kuching.

Face smooth, its sides depressed, transversely striated in the middle above; the clypeus clearly separated from it and obliquely depressed towards the base where is a furrow, which becomes oblique at the sides. Front and vertex smooth and shining; the frontal keel is stout. Base of mandibles testaceous. Middle lobe of mesonotum covered with black pubescence; its apex striated; on the middle, near the scutellum, are some longitudinal keels. Scutellum roundly convex, sparsely punctured; in the centre of the basal depression are 2 stout keels; the post-scutellum rounded; its sides depressed. Median segment smooth and shining and covered with pale pubescence; the pro- and mesopleuræ less shining, more opaque and covered with dark pubescence. Abdomen covered with white pubescence; the basal three segments closely, finely longitudinally striated and minutely punctured; the apical segments smooth; the last is depressed in the middle at the base. Ventral surface more or less brownish. Sheaths of ovipositor covered densely with black pubescence.

ACŒNITINI.

Siphimedia iridicolor, sp. nov.

Black, with distinct blue and violet iridescence; the front femora and tibiæ brownish beneath; a broad pale line on the lower half of the inner eye orbits; wings hyaline, highly iridescent, the nervures and costa black. ♀.

Length 11 mm.; terebra 11 mm.

Hab. Kuching.

Face closely, strongly punctured, its centre with a smooth keel; the clypeus less strongly and closely punctured; its apex raised, smooth, the sides sparsely punctured. Front and vertex smooth, the former keeled down the middle. Middle lobes of mesonotum punctured in the middle; the scutellum more sparsely punctured; the depression with 3 stout keels. On the centre of the median segment at the base are 2 straight irregular bands of reticulations, forming an elongated area, from the apex of which an irregular keel runs to the spiracles and another, longer curved one down the apical slope, the parts between and outside being irregularly striated; the part before and behind the spiracles is irregularly, strongly striated; the metapleuræ below the keel bear round, not very deep, punctures. Upper part of mesopleuræ smooth, the lower and the sternum closely punctured. Body and legs covered with pale hair; the hair on the tibiæ and tarsi is denser; the calcaria black.

The transverse median nervure is received shortly behind the transverse basal and the recurrent nervure shortly beyond the transverse cubital, not interstitial as in the type *S. nigricans.*

Phalgea, gen. nov.

Areolet absent; 2nd recurrent nervure received beyond the transverse cubitus; disco-cubitus with the stump of a nervure; transverse median nervure placed behind transverse basal;

transverse median nervure in hind wing broken above the middle; cubital nervure in fore wing dilated at base. Four front claws cleft before the middle. Hind legs stout and greatly lengthened. Apex of clypeus roundly incised in the middle, the sides tooth-like. First abdominal segment distinctly narrowed, clearly separated and longer than the 2nd and 3rd united; ovipositor not much longer than the abdomen. Apical slope of metanotum smooth and bounded by a keel. Basal joint of hind tarsi as long as the following two united.

The wings are very large, longer than the body; the antennæ, as usual, short; mesonotum deeply trilobate; hinder tibiæ not twice the length of the femora; post-scutellum at base bifoveate, on the outerside bounded by stout keels.

Comes nearest to *Arotes.*

Phalgea lutea, sp. nov.

Luteous, the flagellum of antennæ fuscous, darker towards the apex; wings yellowish-hyaline, the nervures and stigma luteous; hinder tarsi and apex of tibiæ blackish; the lower apex of the fore, and the apex of the hinder wings smoky, with a violaceous tint. ♀.

Length 13; terebra 5-6 mm.

Hab. Matang.

Face and clypeus closely and strongly punctured; the vertex sparsely behind the ocelli and at the eyes; the front deeply excavated; a shining furrow in the middle, the sides striated. Mesonotum and scutellum closely punctured; the apex of the middle lobe irregularly transversely striated. Metanotum smooth, punctured behind the keel. Pleuræ closely punctured, the base of the pro- and the upper part of the meso- smooth; the apical half of the meta- furrowed in the middle.

CRYPTINA.

Silsila apicimaculata, sp. nov.

Black, shining; the face, except at the top and bottom, the clypeus, except above and in the centre at the apex, labrum, inner orbits, pronotal tubercles, scutellar keels, centre of scutellum broadly, post-scutellum, two large marks on the apical slope of the metanotum, extending on to the pleuræ, tegulæ, tubercles, a square mark on the lower edge of the mesopleuræ in the centre, the narrowed base of the 1st abdominal segment, its apex more narrowly, the apices of the others and the ventral segments from the 1st, yellow. Legs yellow, the femora with a fulvous line, the hinder coxæ below and broadly at the sides, trochanters, apical third of hind femora, base of tibiæ narrowly, their apex more broadly and the apical joint of the tarsi, black; the rest of the tarsi white. Flagellum of antennæ broadly white. Wings hyaline, the stigma and nervures black. ♀.

Length 14; terebra 5 mm.

Hab. Matang. August.

Front and vertex smooth and shining; the former furrowed; face obscurely shagreened. Mandibles yellow, black at the apex. Palpi yellow. The tubercles on the pronotum are large, longish, their apex with a longer, less rounded slope than the base. Pro- and mesothorax smooth and shining; the middle lobe of mesonotum broadly rounded at the apex, the furrow with a keel in the centre; it is widely separated from the apical depression which is large and deep. Base of metanotum smooth, the rest closely, transversely striated; the sides on the top of the apical slope are slightly tuberculated; the apical slope is straight and obliquely sloped. Propleuræ, except below with stout, curved keels; the mesopleuræ below the tubercles and the lower half at the base, and the lower part at the apex obscurely striated; the metapleuræ closely, coarsely obliquely striated. Mesopleurl furrow stoutly striated. Sternum thickly covered with white hair. Abdomen smooth and shining; the 2nd and 3rd segments opaque, closely punctured, except on the base of the 2nd which is smooth, and the sides at the base which are aciculated.

Silsila (described Manchr. Memoirs, 1903, No. 14, p. 1) has the appearance of a *Friona* which it also resembles in the striated metanotum, but it belongs to the *Mesostenini*, while *Friona* belongs to the *Cryptini*. It is easily known by the small, longish, narrow areolet, tuberculated pronotum and long narrow petiole.

Friona ruficoxis, sp. nov.

Black, a broad band on the centre of the antennæ, a line on the post-scutellum, a large mark, rounded behind, transverse at the apex at the hind wings, a line down the centre of the apical slope of the metanotum and a broader one across its apex, and the apical two segments of the abdomen, white. Four front legs pale fulvous, the coxæ more rufous in tint, the anterior black above; the hind coxæ bright rufous, the trochanters black, the femora rufous; black above, the tibiæ black, the tarsi white, narrowly black at the base. Wings hyaline, the stigma and nervures black. ♂.

Length 9 mm.

Hab. Kuching. June.

There are some stout keels below and at the sides of the ocelli; face rugose, clypeus shining, aciculated. Mandibles rufous before the apex. Palpi white. Mesonotum shining, smooth, the apical central depression coarsely transversely striated. Base of metanotum to the keel smooth, the rest transversely striated. The top of the pro- and mesopleuræ smooth, the rest longitudinally striated; the metapleuræ irregularly obliquely striated.

Friona pleuralis, sp. nov

Black; the face, clypeus, labrum, mandibles, except at the apex, palpi, the inner eye orbits narrowly, the lower half of the outer, the malar space, the pleuræ, except for an irregular mark on the top of the propleuræ, the median segment except the base and a broad band on the sides of the metanotum, extending near to the top of the apical slope and narrow bands on the apices of the abdominal segments, yellow. Four front legs and hind coxæ yellow; the hind femora, trochanters and tibiæ black, their tarsi white. Wings clear hyaline, the nervures and stigma black. Under side of the 1st and joints 5 to 14 of antennæ white. ♀.

Length 13-14; terebra 4 mm.

Hab. Kuching.

Face rugosely punctured, almost striated, the clypeus smooth, with only a few scattered punctures; the striæ on the front irregular. Apex of central lobe of mesonotum irregularly rugose; the scutellar keels and the sides and apex of scutellum narrowly yellow. Striation on pleuræ and metanotum close and strong; on the apical slope of the metanotum it is oblique above, transverse below and with the centre smooth.

This species differs from the others by the pleuræ and sternum being yellow, not black.

Friona varipes, Cam.

Mr. Shelford sends from Singapore a ♀ of this species which wants the white mark on the mesopleuræ; the line on the metanotum commences in the middle, not at the transverse keel and the apical 2 joints of the hind tarsi are black. The species is probably variable in colouration. The 2 white marks under the antennæ may be very small, and the colouration of the legs varies.

Lactolus plagiatus, sp. nov.

Black, a band on the antennæ, the apical 3 segments of the abdomen above and the hind tarsi, except at the base, white; the 4 front legs pale rufous, their tarsi fuscous, the front coxæ for the greater part black, the middle black at the base, the hinder rufous; the pro- and mesopleuræ striated in the middle, the meta- more closely and regularly on the lower half; the metanotum and the metapleuræ for the greater part brownish. Wings hyaline, the stigma and nervures black. ♂.

Length 11-12 mm.

Hab. Kuching. May.

Front with broken, stout, irregular keels. Face in the centre coarsely rugosely punctured, the sides irregularly transversely striated and bordered by a longitudinal keel. Pro- and mesonotum smooth; the meta- from shortly behind the keel, not very strongly transversely striated, the striæ on the metapleuræ are stronger and commence shortly behind the middle. Areolet square, hardly narrowed behind; the recurrent nervure received in the middle.

This species may be known by the weak striation on the pleuræ and metanotum, by the middle lobe of the metanotum being smooth, not reticulated, and by the brownish splashes on the thorax.

Lactolus reticulatus, sp. nov.

Black, labrum, palpi, a broad band on the middle of the antennæ, post-scutellum, the apical 3 segments of the abdomen above, base of first, a curved mark on the apical slope of the metanotum, and the hind tarsi, except narrowly at the base, white; 4 front legs and hind coxæ, rufous, the 4 front tarsi fuscous; wings hyaline, the stigma and nervures black. ♀.

Length 10; terebra 4 mm.

Hab. Kuching. May.

The centre and the lower part of the front with some irregular keels; the face irregularly rugose; the clypeus smooth. Pro- and mesonotum smooth and shining, the centre of the latter at the apex with a band of twisted striæ; the base of metanotum entirely smooth and shining; the rest closely transversely striated. Apex of pronotum punctured closely above, the rest, except below, striated. Mesonotum closely, irregularly longitudinally striated, except in the middle; the metapleuraæ closely rugosely striated. Areolet longer than broad, the nervures not converging below.

This species, in colouration, agrees closely with *L. basimacula*, but that is a larger and stouter species, its areolet is square, not broader than long and it is narrowed behind, its scutellum and hind femora and tibiæ are brownish and there is a large white mark behind the hind wings.

Lactolus basimacula, sp. nov.

Black, labrum, palpi, a broad band on the antennæ, post-scutellum, a broad band, dilated above, on the apical slope of the metanotum, the apical half of the 6th abdominal segment above and the 7th and 8th entirely, white; 4 front legs bright red, their tarsi blackish; hind coxæ bright red, the trochanters, femora, tibiæ and base of tarsi narrowly, black; the rest of tarsi white. Wings hyaline, the nervures and stigma black; areolet longer than broad, narrowed below. ♀.

Length 17; terebra 5 mm.

Hab. Kuching.

Face coarsely, closely, irregularly reticulated; clypeus shining, minutely sparsely, punctured; the ocellar region and centre of front with some stout irregular striæ, the outer curved. Centre of mandibles finely striated, the teeth brownish. Pro- and mesonotum smooth and shining, the scutellum brownish; the base of metanotum smooth, the sides, at the apex, obscurely striated; the rest closely, strongly transversely striated. The apex and central hollow of propleuræ strongly striated; the upper half of mesopleuræ strongly longitudinally striated, the striæ distinctly separated, the lower more closely striated and with the striæ running into reticulations; the meta- closely, strongly, irregularly striated.

The depressions and sutures of the thorax are striated; the apex of the middle lobe of the mesonotum is transversely striated; the scutellum is brownish and there is a broad white mark behind the hind wings.

Lactolus maculiscutis, sp. nov.

Length 16 mm. ♂.

Hab. Kuching.

Agrees closely in size and colouration with *L. basimacula*; may be known by the face, clypeus and base of mandibles being white; by the scutellum being lined laterally with white, by the areolet being longer and narrower; and by the post-petiole being tuberculated at the base.

Black, face, clypeus, labrum, mandibles, except at the apex, palpi, tubercles, sides of scutellum narrowly, a mark at the sides of the post-scutellum, the apex of metanotum—the mark prolonged in the middle behind—and the apical segment of the abdomen, white. Four front legs red, the middle femora infuscated, their tarsi black; the hind legs black, the coxæ bright red, tarsi white; except at the base. Wings hyaline, the nervures and stigma black. ♂.

Face coarsely rugose, obscurely striated in the middle, the clypeus sparsely punctured. Front in centre stoutly striated. Basal depression of metanotum with 3 stout, longitudinal keels; behind this irregularly obliquely striated and rugose; the rest of metanotum rugose, the base with oblique, converging striæ, the centre at the apex irregularly transversely striated. Apex and central depression of propleuræ stoutly striated; the meso- except at the apex, closely, rugosely, longitudinally, the meta- closely, rugosely, striated.

The middle of the mesonotum at the end of the central lobe, is irregularly reticulated; the scutellar depression is deep, narrow and striated in the middle. Median segment covered with white pubescence. Petiole brownish and dilated at the base; hind tibiæ and tarsi densely covered with dark, short pubescence.

This species differs from the others in having the alar areolet longer and narrower, the scutellum flatter and the abdominal petiole tuberculate at the base and shortly beyond the middle. It differs also from the known males in having the face and clypeus white.

Pharzites, gen. nov.

This genus is closely related to *Lactolus* from which it may be separated by the under noted characters:—

Cubital nervure in hind wings broken above the middle; apex of clypeus obliquely, semicircularly depressed, labrum large, long, narrowed towards the apex. *Pharzites.*

Cubital nervure in hind wings broken distinctly below the middle; clypeus not depressed in front, labrum indistinct. *Lactolus*, Cam.

The malar space is slightly larger; the tarsi are spinose; the median segment is not so distinctly or regularly striated; the antennæ are slender, broadly ringed with white and closely pilose, especially towards the apex; the transverse median nervure is received distinctly behind the transverse basal; the colouration is identical with *Lactolus* except that the hinder tarsi are not ringed with white. The identical colouration of these 2 genera and *Buodias* is noteworthy. The latter is separated from both by the spined median segment.

Pharzites nigritarsis, sp. nov.

Black; a ring on the flagellum of the antennæ, the apices of the basal three segments of the abdomen and the apical half of the penultimate and the last above, white. Legs black; the fore trochanters, femora and tibiæ testaceous; the middle trochanters pale; the hinder coxæ and trochanters bright red. Wings hyaline, the nervures and stigma black. ♂.

Length 11 mm.

Hab. Kuching.

Face irregularly closely striated; the upper part of the clypeus more irregularly longitudinally striated, the apical depression smooth. Mandibles dark red in the middle; the long palpi white. Mesonotum opaque; the scutellum more shining and distinctly punctured. Base of metanotum sparsely punctured, the rest finely rugose, almost transversely striated, in the middle. Mesopleuræ finely punctured, a curved striated furrow in the middle behind. Metapleuræ more closely punctured.

Buodias maculipennis, sp. nov.

Black; the 4 front legs rufous; the hinder coxæ, trochanters and femora of a paler rufous colour, their tibiæ black, the tarsi white, except the apical joint; the palpi and the middle of flagellum of antennæ beneath white; wings hyaline, the nervures and stigma black; there is a fuscous cloud extending from the radius to the discoidal nervure and from the base of the radius to the recurrent nervure. First and second segments of the abdomen narrowly brownish at the apex, the apical two white above. ♀.

Length 11-12 mm.

Hab. Singapore.

Face opaque, aciculated, longitudinally striated above; the clypeus smooth and shining. Front strongly longitudinally and obliquely striated; vertex strongly aciculated. Pro- and mesonotum smooth and shining; the apex of scutellum obscure brownish; the pleuræ opaque, strongly aciculated. Median segment closely, strongly striated; the basal part of the metanotum longitudinally, the apical slope transversely striated, the part behind the keel more finely than the rest and with the area smooth; the apical slope more coarsely, closely transversely; the pleuræ closely, longitudinally striated. All the sutures and depressions are striated. Abdomen smooth, the 2nd and 3rd segments aciculated. Metanotal spines long, fully twice in length the thickness at the base; the basal area clearly defined, in length longer than the width at the base; it becomes gradually narrowed towards the apex.

Buodias rufipes, sp. nov.

Black, a band on the middle of the antennæ, palpi and the apical 2 segments of the abdomen, white; the legs rufous; wings clear hyaline, the nervures and stigma black. ♀.

Length 8-9 mm., terebra 3 mm.

Hab. Kuching.

Face and clypeus opaque, alutaceous, as are also the front and vertex, but not so coarsely; the ocellar region and the centre of the front striated; the latter keeled down the centre. Mesonotum shining, closely, minutely aciculated; the upper part of the propleuræ closely, strongly, and the greater part of the mesopleuræ closely, strongly, irregularly striated. Median segment closely, irregularly striated, the pleuræ more closely and regularly than the rest; the part of the metanotum behind the keel smooth at the base, the rest closely, finely striated. Metanotal spines short and thick. Abdomen smooth and shining; the 5th segment is white at the apex above. Areolet square, its apical nervure faint.

Mesostenus multimaculatus, sp. nov.

Black, the face, clypeus, except the apex broadly in the centre, labrum, mandibles, except at the apex, the orbits except the outer near the top, apex of pronotum broadly, a mark on the apex of the middle lobe of mesonotum, longer than broad, transverse at the base, rounded at apex, scutellum, except at the apex; a longish mark, transverse at base and narrowed towards the apex on the base of the metanotum and reaching to the keel; a broad line on the basal half of the apical slope, its apex more broadly, the base of the pronotum, a small mark on the lower part of the propleuræ, tubercles, a conical mark on the base of the mesopleuræ in the centre, a mark, rounded at the base, on the upper and a similar mark on the lower part of the mesopleuræ, the greater part of the outer edge of the mesosternum, 2 larger marks on its centre, an oval mark below the hind wings above the spiracles and a large mark, roundly narrowed below near the apex of the metapleuræ in the middle and the apices of all the abdominal segments, yellow. Legs pallid fulvous, the coxæ and trochanters paler, the 4 front femora and tibiæ lined above with black; their coxæ marked with black before and behind; the hind coxæ black, largely yellow at the base above and at the apex below; the trochanters black above, the apical fourth of femora, base of tibiæ narrowly, their apical fourth and the last joint of tarsi, black, the rest of tarsi white.

Hab. Kuching.

Mesostenus maculiscutis, sp. nov.

Black, the face (except for a black mark in the centre) clypeus, labrum, the inner orbits (the line continued shortly beyond the eyes) the outer from near the top, the line becoming gradually wider below, the malar space, a mark on the centre of the pronotum, a mark on the mesonotum, transverse at the base, rounded and narrowed towards the apex, tegulæ, scutellar keels, a mark on the base, apex and sides of scutellum, postscutellum, a broad straight line down the centre of the metanotum, united to a transverse one at its apex of about the same width, a curved mark on the lower part of the propleuræ, tubercles, a broad line, dilated upwards at the base and apex and united before the apex to a large mark on the mesosternum and a large mark on the middle of the metapleuræ, yellow. The 6 basal segments of the abdomen banded with yellow at the apex; the 3 apical bands not united to the yellow on the ventral surface, the apical two-thirds of the last segments broadly on the sides and narrowly on the apex, the basal ventral segments at the apex and the apical entirely, yellow. Four front legs yellow, the femora and tibiæ in the middle above, their tarsi, the hind coxæ broadly at the base below, at the apex above, the apical joint of the hinder trochanters, apex of femora, of tarsi more broadly and their base narrowly, black; the rest yellow, the yellow on the femora and tibiæ with a rufous tinge. Wings hyaline, the stigma and nervures black. ♀.

Length 18 mm.; terebra 9 mm.

Hab. Kuching.

Front irregularly reticulated in the centre, the sides longitudinally striated. Face closely, the clypeus more sparsely punctured. Mesonotum and base of metanotum closely and distinctly; the scutellum more strongly, but not so closely, punctured; the metanotum, from the basal keel, closely striated, the striæ curved. Upper part of propleuræ smooth, the rest closely striated; mesopleuræ closely punctured, the base, stoutly, obliquely striated; meta- closely obliquely striated. Back of abdomen closely punctured; the punctures on the 1st segment more widely separated.

Cratocryptus, gen. nov.

Median segment short, reticulated, its sides dentate, its base with a central area, the spiracles small, oval. Head as wide as the thorax, temples very short, obliquely narrowed; eyes large, parallel, malar space small. Apex of clypeus rounded, the large labrum dilated broadly in the middle. Mandibles with 2 equal teeth. Areolet small, square, the apical nervure faint; transverse median nervure received shortly behind the transverse basal; disco-cubital nervure roundly curved not broken by a stump; transverse median nervure in hind wings broken distinctly below the middle. Post-petiole broad, the petiole becoming gradually wider. Antennæ ringed with white, slender; the 1st joint of flagellum longer than the 2nd.

There is only 1 keel on the metanotum; there is none on the metapleuræ. Parapsidal furrows distinct on the basal half. Thorax about 3 times longer than wide; its apex almost tranverse and with a steep slope. Legs stout, basal joint of front tarsi shorter than the tibiæ ; the claws of moderate size ; last joint of hind tarsi as long as the 3rd. Spiracles wider from each other than to the apex of the petiole, owing to its great width.

Comes nearest to the American genera *Christolia* and *Mesostenoideus*, but it cannot well be referred to either. Of the Oriental genera it comes nearest to *Skeatia*. The two may be distinguished thus.

Areolet square; apex of median segment only slightly oblique ; labrum large, distinctly projecting ; petiole not becoming gradually wider towards the apex. *Cratocryptus*.

Areolet narrow, distinctly longer than wide ; apex of median segment with a distinct, oblique slope; labrum hidden; petiole becoming gradually wider towards the apex. *Skeatia*.

Cratocryptus maculiceps, sp. nov.

Black ; the clypeus, except at the apex, the inner orbits—the line roundly narrowed opposite the antennæ,—an oblique, somewhat triangular, mark below the eyes, a line on the pronotum, not reaching to the base, tegulæ, scutellum, its keels narrowly, the sides of the median segment broadly—half on the metanotum, half on the pleuræ and dilated on the inner side above—the base of the propleuræ, a mark below the hind wings, rounded in front, transverse behind, a broad band on the 1st and 2nd segments of the abdomen, a narrow band on the 5th and the apical two entirely, yellow. Four front legs fulvous, the hinder coxæ, trochanters and femora of a darker red colour, their tibiæ and tarsi much paler, with the apex of the hinder tibiæ and the apical joint of the tarsi, black. Wings hyaline, the nervures and stigma black, the areolet square, its apical nervure faint. ♀.

Length nearly 8 ; terebra nearly 2 mm.

Hab. Kuching. June.

Basal joints of antennæ brownish beneath, joints 6-14 white. Centre of face raised, rugosely punctured, the sides sparsely punctured. Lower part of vertex at the ocelli and upper part of front closely obliquely, the lower part more closely and finely transversely striated. Mesonotum closely, distinctly and finely punctured, the sides and apex obscurely striated. Scutellar depression with 4 stout keels; the scutellum almost impunctate. Base of metanotum closely finely rugose and with a few keels at the sides of the area; the rest is closely reticulated, the apical slope in the middle finely rugose. Propleuræ behind the keel strongly, obliquely striated; mesopleuræ closely, rugosely reticulated, less closely at the top where there are a few oblique and curved striæ; petiole smooth and shining; the 2nd and 3rd segments closely punctured; gastrocoeli obscurely striated.

Skeatia balteata, sp. nov.

Black; the face, clypeus, mandibles, eye orbits, a line on the centre of the pronotum, a square mark on the apex of the middle lobe of the pronotum, scutellums, the sides, including the teeth broadly, and the top of the apical slope of the metanotum, tubercles, a mark, longer than broad, above the apex of the mesopleuræ, a line below on its apical half and a similar line on the sides of the basal half of the mesosternum, an oblique mark under the hind wings and a large mark, becoming gradually wider below, on the centre of the mesosternum and the apices of all the abdominal segments, yellow. Legs fulvous, the middle tarsi blackish, the hinder white; the outer side of the hind coxæ, hind trochanters, base and apex of femora, the tibiæ at the base narrowly and at the apex more widely, black. Wings hyaline, the stigma and nervures black. Flagellum of antennæ broadly white. ♀.

Length 11-12 mm.

Hab. Singapore.

Face sparsely and strongly punctured, its centre projecting. Front and vertex smooth. Mesonotum opaque, closely and distinctly punctured; the middle of the central lobe shining; scutellums smooth. Metanotal area distinctly defined, moderately large, its apex about half the length of the base; the rest of the base finely rugose, depressed near the area; the remainder of the metanotum closely reticulated; the apical slope more strongly than the middle; the teeth are large, about 3 times longer than thick at the base. Propleuræ stoutly striated; the meso- closely rugosely punctured, except at the apex where it is shining. Second and third segments of abdomen opaque, the others smooth and shining.

Is not unlike *S. varipes*, but that is larger, has a large irregular mark on the lower part of the mesopleuræ, the mesosternum yellow, and the 4 front femora are lined with black above.

Vagenatha armata, sp. nov.

Black, the face, clypeus, the inner orbits, the outer from shortly below the middle, the malar space, mandibles, palpi, the projecting outer angles of the pronotum, tegulæ, scutellum, a mark on post-scutellum, the sides, including the spines, of the apical slope of the median segment, the lower edge of the propleuræ, tubercles, an oval mark on the lower part of the mesopleuræ, near the base, a mark under the hind wings and the apices of all the abdominal segments broadly, yellow. Four front legs yellow; the hinder coxæ and basal joint of trochanters, the apical third of femora, and the apical fourth of tibiæ, black; there is a large mark, obliquely narrowed at the apex, on the top of the coxæ; the yellow on the femora has an orange tint. Wings hyaline, the stigma and nervures black. ♀.

Length 10 mm.

Hab. Kuching. January.

Flagellum of antennæ broadly yellow. Front broadly in the centre strongly, obliquely striated, the striæ distinctly separated. Face and clypeus strongly punctured, the latter not so closely as the face. Mesonotum closely rugosely punctured; scutellum strongly punctured, the punctures clearly separated. The area on the base of the metanotum triangular; the part behind the keel is stoutly, irregularly striated, at the base irregularly, strongly punctured; the rest stoutly reticulated, the apical slope much more closely and regularly than the upper part. Propleuræ stoutly, obliquely and closely striated; their bases bordered by a stout, straight keel; mesopleuræ stoutly striated, the striæ more irregularly and widely separated on the apex below; the lower part at the base closely punctured; metapleuræ strongly, closely rugosely punctured, its lower edge with a distinct border. Petiole shining, the post-petiole punctured, but not closely or strongly, the 2nd and 3rd segments opaque closely, distinctly punctured. This species may be separated from *V. spinosa* as follows:—

Lower outer orbits yellow, not densely pilose; the metanotal spines not united by a yellow line, the face yellow. *Armata.*
Lower outer orbits and face black; the cheeks densely pilose; the metanotal spines united by a curved yellow line, the face black. *Spinosa.*

Coesula, gen. nov.

Transverse median nervure in hind wings broken below the middle; median nervure at the base roundly curved towards the costa. Areolet minute, open at the apex. Cubito-disco nervure angled in the middle, and with a minute stump of a nervure. Transverse median nervure interstitial. Median segment with 2 transverse keels; a longitudinal furrow between them; its spiracles small, oval, not much longer than broad. Antennæ longer than the body, thickened and broadly ringed with white in the middle; the basal joints of flagellum greatly elongated; the basal two equal in length. Clypeus roundly convex; its sides and apex depressed; malar space almost obsolete; temples very short. First abdominal segment as long as the 2nd, broad at the base, becoming gradually wider towards the apex; not much curved, not bent or elbowed; the segment banded with white at the apex; ovipositor short.

The median segment is short and has a somewhat steep rounded slope on the apex; its sides finely striated; the areola is only defined at the apex; on the base is a closely striated depression; its apex is irregularly rugosely striated; the basal keel extends to the mesonotum. Thorax fully 3 times longer than wide; its sutures moderately deep. Claws slender, longish; the last joint of hind tarsi distincly shorter than the 3rd. Head wider than the thorax. Spiracles of 1st abdominal segment closer to each other than to the apex of the segment.

This genus is referred to the *Mesostenini* from its small almost punctiform areolet and from its more thickened antennæ.

Comes nearest to *Mesostenus*=*Stenaræus*, Thoms.; it is much more slenderly built; the disco-cubital nervure is angled and broken by a stump; the median nervure in hind wings not straight, but roundly curved, the temples much shorter, and the clypeus much more convex and roundly separated.

Cœsula fulvipes, sp. nov.

Black, the base of the mandibles, an oblique mark on the hinder part of the vertex close to the eyes, a mark on the middle lobe of the mesonotum at the apex, longer than broad, rounded at the apex, transverse behind, scutellum, except at the base, a longish spot on either side of the central furrow on the metanotum, its apex and a large irregular mark, longer than broad, on the sides, the apices of the 4 basal segments of the abdomen and the 6th and 7th broadly, white. Legs bright fulvous; the middle tarsi blackish, the posterior white, black at the extreme base. Antennæ longer than the body, the scape rufous below; the 7th to 15th clear white below. Wings hyaline; the stigma and nervures black. ♀.

Length 10 mm.; terebra nearly 2 mm.

Hab. Kuching. April.

Face finely, closely transversely rugose; the rest smooth and shining, the front with a broad, shallow furrow. Thorax shining; the pleuræ finely, closely longitudinally striated; the pro- smooth above, irregularly striated below; the apex of the metanotum with some longitudinal striæ below the keel and some transverse lines at the apex. Hinder knees black; the calcaria blackish.

Dinocryptus, gen. nov.

Entirely black, the wings uniformly violaceous. Transverse basal nervure almost interstitial. Disco-cubital nervure roundly curved, not broken by a stump of a nervure. Transverse median nervure in hind wings broken almost in the middle. Median segment large, without transverse keels; its apex with 2 tubercles and with an oblique, straight slope; the spiracles elongate. Petiole longer than the 2nd segment, its base distinctly narrowed, the rest of equal width, roundly curved in the middle. Legs stout, longish; the basal joint of all the tarsi longer than the other joints united; fore tibiæ shorter than the tarsi, stouter than the others and distinctly narrowed at the base. Temples moderately wide, rounded; the occiput margined, slightly, roundly incised. Parapsidal furrows distinct to shortly beyond the middle. Apex of clypus projecting in the middle, the centre of the projection roundly incised, with the sides rounded; the apex below this is depressed, clearly separated and transverse. Metapleuræ keel broad and dilated at the base, narrowed at the apex.

Comes near to *Cryptoidens*, Ashmead. The toothed clypeus, the absence of transverse keels on the metanotum, the dark violaceous wings and the long metatarsus are 4 points which make the genus easily recognised.

Dinocryptus niger, sp. nov.

Black; the inner eye orbits white in the middle; the wings uniformly dark fuscous-violaceous, with violet and purple tints and highly iridescent, the stigma and nervures black. ♀.

Length 20; terebra 12 mm.

Hab. Kuching. April.

Head closely and distinctly punctured; the face roundly, broadly dilated in the middle; inner orbits distinctly margined. Thorax closely and distinctly punctured, except on the propleuræ which has the base smooth, the apex finely punctured. The apical segment of the abdomen is smooth and shining; depressed in the middle at the base; the others are closely punctured, the punctuation becoming finer towards the apical segments. The 2nd segment is raised at the base, this part being bounded by shallow, oblique furrows; there are shallow transverse furrows on the middle segments; the penultimate is as long as the preceding 3 united. Tarsi closely and shortly spined.

Melcha hyalinis, sp. nov.

Black, shining; the median segment, except on the base of the metanotum, the apex of the mesopleuræ, the mesosternum, post-scutellum and the base of the petiole, red; the face, clypeus, base of mandibles, apex of petiole and the apex of the 2nd abdominal segmentfrom shortly behind the middle, pale yellow; the 4 front legs pale rufous, the hind coxæ rufous, blackish above, the trochanters and femora blackish-fuscous, the femora dull rufous below, the tibiæ blackish, their basal fourth clear white; the basal and apical joints of the tarsi black, the others clear white. Antennæ fuscous, darker towards the apex, the scape yellowish, tinged with rufous. Wings hyaline, the stigma and nervures black. ♂.

Length 6 mm.

Hab. Kuching.

Smooth and shining. Area on metanotum aciculated; the part between the 2 keels obscurely striated in the middle; the apical slope with some curved striæ above. Hind tarsi and tibiæ minutely spinose.

Melcha reticulata, sp. nov.

Black; the labrum, palpi, tegulæ, the 4 front coxæ and trochanters, the basal fourth of the hind tibiæ, the apex of the 1st joint of the hind tarsi and their 2nd 3rd and 4th joints, white; the apex of the metanotum, the greater part of the metapleuræ and the petiole pale rufous; the base of the post-petiole black, its apex and the apices of the 2nd and 3rd segments broadly, white. Antennæ black; the scape and the base of the flagellum dark testaceous. Wings hyaline, the stigma and nervures black.

Length 7 mm.

Hab. Kuching. March.

Smooth and shining; the face above obscurely punctured; the metanotum behind the keel reticulated, the sides striated; the reticulations are widest at the base; the basal central area is greatly widened at the base, with the sides oblique; at the apex the sides are straight. Pro- and mesopleuræ smooth and shining; the meta- aciculated.

Melcha albomaculata, sp. nov.

Black; the median segment, scutellum, post-scutellum and the parts at their sides, the mesopleuræ, except for a triangular mark on the upper basal corner, and the meso- and meta-sternum, rufous; the apex of the post-petiole rufous, tinged with yellow; more than the apical third of the 2nd abdominal segment, the penultimate above and the apical entirely, white. Four front legs and the hinder coxæ rufous; the rest of the hind legs black; a band on the base of the tibiæ, the apex of the 1st and the whole of the 2nd and 3rd joints, white. 6th to 11th joints of antennæ white, except above. Wings hyaline, the nervures and stigma black. ♀.

Length 9 mm; terebra 2 mm.

Hab. Kuching.

Antennæ stout, the flagellum slightly brownish. Face rugosely punctured, the sides with irregular, longitudinal striæ Clypeus smooth and shining. Front and vertex opaque; the front with a stout keel running down from the ocelli; the part on either side of the keel irregularly transversely striated. There are 5 stout keels in the basal scutellar depression. Post-scutellum depressed, the depression rounded behind and in the front, the basal bounding keel produced roundly backwards in the centre. Base of median segment smooth, the keels of the area thin; the part beyond the keel closely regosely punctured, almost reticulated; the apical slope coarsely transversely reticulated, more coarsely on the sides than on the centre; the teeth longish. The apex and centre of the propleuræ longitudinally striated; the striæ becoming gradually narrowed from the apex to the base; the basal half of the meso- more irregularly and widely striated to near the bottom; the meta- closely and strongly obliquely striated. Mesopleural furrow crenulated.

Hadrocryptus striatus, sp. nov.

Black, the apex of the clypeus, labrum, palpi, the 5th to 14th joints of the antennæ, apex of scutellum, post-scutellum, a mark on the top of the apical slope of the metanotum, rounded and narrowed above, transverse below, the apices of the basal 4 abdominal segments, the basal third of the 1st, the sides of the 5th, the penultimate almost entirely and the greater part of the ventral segments, white. Legs white, all the coxæ and trochanters, the hind femora, basal of hind femora slightly, the apex more broadly and the apex of the 5th joint of the hind tarsi and the apical 2 joints of the 4 anterior, black; the 4 front femora dark fuscous. Wings clear hyaline, the stigma fuscous the nervures darker. ♀.

Length 12 mm; terebra 3 mm.

Hab. Kuching.

Face irregularly, longitudinally striated; the tubercle smooth, rounded, longer than broad, dull white. Clypeus sparsely punctured, shining; the lateral depression irregularly striated and bounded on the outerside by the usual keel. Front closely, longitudinal striated above, furrowed down the centre. Mesonotum, except at the apex, closely, transversely, irregularly striated. Scutellums smooth, metanotum at the base obliquely striated and punctured; the rest strongly distinctly transversely striated; the apex has an oblique slope and has a round tubercle or short tooth on the sides above. Propleuræ punctured above, the rest strongly striated; the meso- closely reticulated, the apex below and the base above striated; the meta- more closely reticulated. Abdomen smooth and shining. Tarsi spinose.

The areolet is large, almost square; the transverse median nervure is almost interstitial; the transverse cubital nervure in the hind wings broken shortly below the middle. Coxæ thickly covered with white pubescence, the hinder closely punctured.

Colganta varicornis, sp. nov.

Luteous; the hind femora, apical third of tibiæ and hind tarsi, black; the base of antennæ luteous, the middle whitish-yellow, the apex black; wings hyaline, the base with a slight fulvous tinge, the costa and stigma testaceous, nervures darker coloured. ♀.

Length 12; terebra 2 mm.

Hab. Kuching.

Head pale yellow; the vertex obscurely, closely punctured, the front impunctate; the face strongly, but not closely, punctured; the clypeus smooth, obscurely punctured above; its apex depressed in the middle. Mesonotum of a dark reddish-yellow colour, closely punctured. Scutellum with the punctures more clearly separated. Central area of metanotum closely, strongly transversely striated, much more strongly above than below; the lateral basal areæ are closely, strongly transversely striated; the upper posterior strongly obliquely striated above, below irregularly reticulated. Upper part of propleuræ with stout curved striæ, the lower longitudinally striated; upper part of meso- closely punctured, the middle striated; the apex stoutly crenulated; the meta- closely striated, the striæ more or less curved; below these is a stout keel. Abdomen smooth and shining.

The basal and apical abscissæ of the basal keels on the metanotum are straight, not rounded and are obliquely sloped; the disco-cubital nervure is broadly, roundly curved, not angled. The species comes near to *annulicornis* from which it may be known by the smaller size, by the apex only of the hinder tibiæ being black and by the base of the flagellum not being black,

Colganta annulicornis, sp. nov.

Luteous, the ocellar region black, the mark gradually, obliquely narrowed towards the apex, the antennal flagellum black, the 6th to 13th joints white above; the apical third of hind femora, and the hind tibiæ and tarsi, black; wings hyaline, the base with a yellowish tinge, the stigma dark testaceous, the nervures black. ♀.

Length 17 mm.; terebra 5 mm.

Hab. Kuching.

Sides of face strongly its sides more finely and the top of clypeus less strongly punctured; the clypeus in the centre at the apex depressed, the depression rounded above, transverse below; centre of front closely punctured, more strongly above than below. Mesonotum darker coloured than the rest of the thorax and closely, uniformly and strongly punctured, except at the apex; the scutellum is more strongly punctured. Metanotum behind the keel irregularly reticulated; the keels are stout, irregularly waved on the innerside, and raised there at the base; the posterior median area is depressed and transversely striated, the striæ stronger on the sides; the lateral areæ are irregularly reticulated, the keels being much stronger than in the centre; there are 4 apical areæ; the spiracular region is bounded by stout keels and is strongly striated. Propleuræ behind irregularly striated; the meso- minutely, indistinctly punctured; the meta- rugosely, coarsely punctured. Hind coxæ closely punctured; the tarsi spinose; below they have a rufous tint.

JOPPINI.

Agarenes, gen. nov.

♂. Head wider than the thorax; the temples wide, the occiput roundly incised. Scutellum flat, large, its sides keeled. Base of metanotum obliquely, deeply depressed; areola large, slightly longer than broad, rounded behind, transverse in front, widely separated from the base of the segment and without a petiolar area. Areolet narrowed in front, the nervures almost touching there; disco-cubital nervure broken by a stump of a nervure; transverse basal nervure interstitial. Petiole smooth, post-petiole obliquely narrowed at the base; the 2nd and 3rd segments closely punctured; there are 8 segments; the last minute, blunt and with stout, longish cerci; the ventral keel extends to the apex of the 3rd segment. Antennæ shorter than the body, narrowed and serrate at the apex. There is an oblique keel on the propleuræ, and 2 on the lower part of the meta- between the coxæ.

The median segment is regularly areolated, more so than in the typical *Joppini*; the ventral keel is large and is on the 2nd and 3rd segments only: the 2nd and 3rd segments of the abdomen are minutely punctured, the 2nd striated at the base; tarsi minutely spined.

I unfortunately only know the ♂ of this genus. Like some other Oriental genera it is somewhat intermediate between the *Amblypygi* and the *Joppini*.

Agarenes cariniscutis, sp. nov.

Black, shining; the face, clypeus, inner orbits narrowly, the lower two-thirds of the outer, a short narrow line on the apex of the pronotum, tegulæ, sides and apex of scutellum narrowly, post-scutellum, the sides of the apical slope of the metanotum, the narrowed basal part of the petiole, 2 marks on its apex, 2 on the apex of the 2nd and 3rd segments, the apical half of the 6th and the whole of the 7th and 8th, pallid yellow. Four front legs pallid fulvous; the hind coxæ, trochanters and femora rufous, their tibiæ and tarsi black, the former paler at the base behind; calcuria rufous. Wings hyaline, the nervures and stigma black. ♂.

Length 11 mm.

Hab. Kuching.

Face distinctly punctured. Ocelli in front bounded by a curved furrow. Mesonotum minutely punctured, the basal half with 2 longitudinal furrows: scutellum more strongly, but not so closely, punctured. Base of metanotum smooth; the areola irregularly longitudinally striated; the other areæ closely, transversely, strongly striated. Pro- and mesopleuræ indistinctly, the meta- closely and strongly punctured. The 2nd and 3rd abdominal segments closely punctured, striated at the base. Gastracoeli shallow, irregularly striated.

Druscia, gen. nov.

Scutellum obliquely raised from the base, its apex with an oblique slope, its top ending in 2 stout teeth. Median segment completely areolated: the areola longer than broad, obliquely narrowed at the base, separated from the base of the segment by an area of almost its own length, this area becoming gradually wider from the apex to the base. Occiput deeply incised; temples wide, obliquely narrowed. Apex of clypeus broadly rounded. Labrum hidden. Abdomen with 8 segments; the 1st long and slender; the last small; sheath of ovipositor long, projecting. Areolet 5-angled, narrowed in front; transverse basal nervure interstitial; the disco-cubital broken by the stump of a nervure. Legs long, the apex of hinder femora reaching to the 5th segment; ventral fold broad, reaching to the base of the ovipositor.

The tarsi are long and spinose; there is a keel between the two hind coxæ and another above it; the antennæ are dilated and compressed before the apex and ringed with white; the abdominal segments closely punctured and not longitudinally striated at the base; face and clypeus flat; the wings fuscous.

This genus is intermediate between the *Joppini* and the *Amblypygi*. In the form of the metathorax it does not differ from the latter and can hardly be looked upon as a typical genus of *Joppini*.

Druscia 4-dentata, sp. nov.

Black, the sides of the face and clypeus, the line on the latter dilated inwardly at the apex, the lower two-thirds of the inner orbits, the scutellar spines, a line on the lower edge of the scutellum, post-scutellum, an irregular mark on the lower side of the mesopleuræ near the apex, a line on the pronotum at the base, and a spot on its apex in the centre, pale yellow, almost white; the basal 3 segments of the abdomen red; the base of the 1st and the apices of the others white. Legs black, the 4 anterior with their coxæ and trochanters for the greater part and the tibiæ and tarsi in front white; the hinder coxæ red, black at the apex below. Wings fuscous-violaceous, the hinder paler at the base, antennæ black, the 8th to 11th joints white beneath. ♀.

Length 13 mm.

Hab. Kuching. March.

Front, below the ocelli and the face and clypeus obscurely punctured, shining; the face and cheeks thickly covered with silvery pubescence. Pro- and mesothorax obscurely punctured, scutellum shagreened; the apex of the mesopleuræ obliquely striated below. Basal areæ of metanotum obscurely punctured; the posterior median area closely transversely, the lateral more strongly and less closely striated; the sides and apex of the segment thickly covered with longish white pubescence.

Cænojoppa, gen. nov.

Mandibles very broad, largely projecting below the mouth at the base, their apex with 2 large, widely separated teeth; below broadly roundly curved from the base to the apex. Occiput roundly incised. Temples broad. Face flat, not separated from the clypeus, which slightly projects in the middle at the apex. Scutellum raised; its sides and apex on the top with a distinct keel, its apex with an oblique slope. Median segment completely areolated, its base in the middle broadly, obliquely depressed; areola clearly separated from the base of the segment, broad behind, roundly narrowed at the apex; the sides of the segment with short, sharply pointed teeth. Mesosternum with a curved furrow on the sides at the base. Areolet oblique, large, 5-angled; the disco-cubital nervure broken by the stump of a nervure. Legs long, slender; the basal 2 joints of the hinder tarsi as long as the tibiæ. Antennæ longer than the body, stout. Post-petiole broad, obliquely sloped at base and apex; 2nd and 3rd segments minutely closely punctured, not striated; there are 7 segments; the last is longer than the 6th. Head cubital, as long as wide.

I am only acquainted with the ♂ of this genus. Characteristic is the form of the mandibles. which are larger and stouter than usual, the longer hinder tarsi and (for the *Joppini*) the regularly areolated metanotum.

Cœnojoppa longitarsis, sp. nov.

Black, shining; the face, clypeus, the outer orbits broadly, the inner more narrowly to near the top, a line on the apical half of the pronotum, broader line on the lower edge of the propleuræ, a broader one on the lower part of the mesopleuræ, the tubercles, a broad mark, longer than wide, on the apical half of the metapleuræ, touching and below the keel; a mark, longer than wide, on the mesonotum, the scutellums, 2 marks, narrowed below on the middle of the metanotum, the narrowed basal part of the petiole and the apices of all the abdominal segments, pale yellow. Four front legs with a fulvous tinge, the hind coxæ black, yellow above, apical joint of trochanters black below, the femora rufous, the tibiæ and tarsi yellow, the former black at the base and apex. Wings clear hyaline, the nervures and stigma black. First segment of abdomen smooth and shining; the 2nd and 3rd closely punctured; gastracoeli large, wide, their middle with a few irregular striæ; the space between shining, aciculated, finely, irregularly striated. Hinder tarsi with the basal 2 joints together longer than the tibiæ.

Facydes striolata, sp. nov.

Rufo-luteous; a large mark on the face, becoming gradually wider below, the clypeus except narrowly at the apex, the base of the 2nd abdominal segment in the centre and in front of the gastrocoeli, the base of the 3rd and 4th and the 5th and following segments entirely, black; the legs similarly coloured, the apex of the hind femora, almost the apical half of the tibiæ and the tarsi entirely, black. Wings yellowish-hyaline, the apex from the end of the areolet fuscous-violaceous, the stigma luteous, the nervures darker coloured. Antennæ black, the thickened apical part fuscous. ♀.

Length 16 mm.

Hab. Penrisen, 4500 feet. May.

Face and clypeus closely punctured, the sides of the former broadly, of the latter narrowly, pale yellow; the front and vertex smooth; the ocellar region and the occiput broadly, black. Thorax closely and clearly punctured; the mesonotum darker coloured and thickly covered with fuscous pubescence; the scutellum closely covered with longer, darker hair. Apical slope of metanotum irregularly, coarsely transversely striated; the top of the posterior median area longitudinally striated; its bordering keel smooth and shining. Upper part of propleuræ closely punctured; the meso- less closely, the middle behind almost smooth; the meta- closely and distinctly punctured.

The post-petiole longitudinally striated; the 2nd to 6th segments are closely, regularly longitudinally striated; the apical segments smooth.

Cratojoppa rufofemorata, sp. nov.

Black; face, clypeus, orbits—on the outerside narrowly above—a line on the pronotum, scutellum, tubercles, a large mark on the lower half of the mesopleuræ, 2 large marks, obliquely narrowed on the inner side, on the apices of the basal 3 segments of the abdomen and the apices of the others, yellow. Four front legs fulvous, their coxæ and trochanters pale yellow, the tibiæ darker behind; the hind coxæ black, pale yellow above, the trochanters, tibiæ and tarsi pale yellow, the femora rufous, their apical fourth and about the apical half of the tibiæ, black. Wings hyaline, the stigma and nervures black. Antennæ black, the scape beneath and the middle of the flagellum broadly white.

Length 18 mm.

Hab. Tansan.

Face punctured, its face with a large black, spot, which at the apex, is dilated round the top of the clypeus. Front and vertex smooth, impunctate. Basal half of mandibles pale yellow. Mesothorax closely and distinctly punctured and covered thickly with white pubescence. Areola irregularly, strongly punctured on the apical half; the lateral areæ strongly punctured on the outerside; the posterior median strongly transversely striated; the lateral areæ strongly punctured, the punctures clearly separated; the spiracular rugose at the base, the rest closely, strongly obliquely striated. Upper part of propleuræ minutely punctured, the lower at the base smooth and shining, the apex strongly longitudinally striated, the striæ shorter above than below, where they become gradually longer; the mesopleuræ closely punctured, except in the middle behind; the meta- closely and more strongly punctured. Breast and median segment thickly covered with longish white pubescence. Middle of post petiole closely striated, the sides distinctly, but not very closely, punctured: the 2nd to 4th segments closely punctured; the 2nd and 3rd striated at the base; gastrocoeli deep, curved, transverse, smooth.

This species has the areola shorter, wider and projecting only slightly beyond the apex of the lateral areæ and is more distinctly separated at the apex than in *C. robusta* or *C. macu-liceps*; the temples are shorter, the occt ipunot so deeply incised, the fore legs shorter and stouter, with the tarsi shorter and stouter compared with the tibiæ. It cannot be looked upon as a typical *Cratajoppa.*

Anisobos cincticornis, Cam. *

This species is to be referred to my genus *Acanthojoppa*, *The Entomologist*, 1902, p. 109. My description may be usefully supplemented, as the species in this genus appear to be numerous, and difficult to separate from their uniform colouration.

Scutellum flat on the top, its apex with a long perpendicular slope and raised above the post-scutellum; its sides and apex with distinctly raised margins. Median segment completely areolated: the areola wider than long, and separated by more than its own length from the base of the segment, which is depressed in the centre, the depression being bounded by keels laterally. Face and clypeus flat, not separated; the clypeus foveate at the sides above. Labrum projecting. Eyes larger, not converging above or below; the malar space large. Occiput widely and deeply roundly incised. There are 3 distinct areæ on the base of the median segment behind the areola and 3 on the apical slope; the middle areæ being also clearly defined; the sides are bluntly toothed. There is a stout keel above the middle of the propleuræ; the pronotum is broadly margined above laterally; its centre is roundly depressed. Metathoracic spiracles linear. There are 2 short, deep furrows on the base of the mesonotum. These is a shallow furrow on the sides of the mesosternum at the base. Areolet 5-angled, narrowed above; the disco-cubital and the recurrent nervures with the stump of a nervure. Petiole long and slender, the post-petiole not abruptly separated. Gastrocoeli shallow; the ventral keel broad, extending to the apex of the 4th segment; there are 7 segments, the last is as long as the preceding and bluntly pointed. Legs long; the hinder tarsi sparsely spined. Antennæ slender, serrate, broadly ringed with white; the pedicle is minute, narrowed; the 3rd joint is distinctly longer than the 4th.

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* J. Str. Br. Roy. As. Soc. 1902, 51.

ACULEATA.

Tachytes varipilosa, sp. nov.

Black, the pubescence on the head pale golden, on the thorax pale fulvous, on the abdomen silvery; wings yellowish-hyaline, the nervures and stigma testaceous. ♀.

Length 13 mm.

Hab. Kuching.

Front, face and clypeus densely covered with golden pubescence; vertex finely rugose, obscurely furrowed down the centre; eyes at the top separated by fully twice the length of the 2nd antennal joint. Thorax alutaceous; the median segment thickly covered with long pale pubescence; the fovea on the apex of the basal slope pyriform; the apical slope with curved, fine striæ; the base is not furrowed; tarsal and tibial spines rufous; costa and stigma dark, the other nervures pale testaceous; tegulæ testaceous, 1st transverse cubital nervure with 3 curves.

Comes near to *T. aurifex*, Sm.; that species is larger, has the scape of antennæ rufous, the apex of clypeus rounded in the centre, and otherwise, may easily be separated by the eyes converging more above, they being there separated by distinctly less than the length of the 5th antennal joint.

Tachytes aureocincta, sp. nov.

Black; the hair on the head and thorax fulvous; the abdominal segments banded with golden pubescence; the pygidium with silvery pile and, more sparsely, with long fulvous hair; wings hyaline, suffused with yellow at the base; the tibiæ and tarsi and apex of hinder femora rufo-testaceous. ♀.

Length 14-15 mm.

Hab. Matang.

Clypeus smooth and shining; the centre depressed, transverse; front with, narrow, but distinct, furrow in the centre, the eyes at the top separated by the length of the 5th antennal joint. Mandibles black, the base covered with pale fulvous pubescence. Metanotum with a shinning V-shaped fovea on the apex of the basal part. The long spur of the hinder tibiæ is fully longer than the metatarsus, which is as long as the following 2 joints united.

Of the Bornean species this is not unlike *T. borneana*, Cam.; that species has the eyes more widely separated above, being there separated by the length of the 5th antennal joint; its wings want the distinct yellowish tinge of *varipilosa;* and otherwise is easily known by the shorter and thicker hinder tarsi of which the metatarsus is not much longer than the 2nd joint and shorter than the long joint of the tibial spines.

Pompilus flavifrons, sp. nov.

This species resembles closely *P. cariniscutis*, Cam. from which it may be known as follows:—

Post-scutellum higher than the scutellum, front broadly black in the centre, apex of clypeus transverse, mandibles for the greater part yellow, scape of antennæ black above, apex of hinder tibiæ broadly black. *cariniscutis,* Cam.

Post-scutellum not higher than the scutellum, apex of clypeus broadly curved, mandibles for the greater part black, scape of antennæ yellow, apex of hinder tibiæ not black. *flavifrons,* Cam.

Black, the vertex from near the ocelli, face, clypeus, labrum, outer orbits narrowly from near the top, a broad interrupted band on the apex of the pronotum, scutellum, post-scutellum, and scape of antennæ bright yellow; the apex of femora, tibiæ and tarsi rufo-testaceous; wings hyaline; the apex from near the base of the radial cell smoky, with a slight violaceous tinge.

Clypeus broad, the apex roundly, but not deeply incised, with the sides straight, oblique. Labrum obliquely depressed. Mandibles black. Palpi yellow. Third abscissa of radius distinctly shorter than second. Metanotum irregularly transversely striated. Penultimate ventral segment covered with long black hair; the others more sparsely and shortly haired. Hinder metatarsus as long as the following 3 joints united and slightly more than one-third of its length. 12 mm.

Salius matangensis, sp. nov.

Black; the abdomen and legs, except the coxæ, ferruginous red; wings large, brilliant fuscous-violaceous, the nervures and stigma black; the labrum and apex of mandibles red; the palpi rufo-testaceous. ♂.

Length 13 mm.

Hab. Matang. June.

Head and thorax covered with pale pubescence; the pleuræ more sparsely with long pale hair; the base of metanotum smooth, with a V-shaped depression in the middle, the rest finely, obscurely striated; the sides of the apical slope at the top project bluntly, the apex much more largely and prominently. First abscissa of radius clearly shorter than the second; the fourth straight and obliquely turned upwards; the 3rd is roundly curved upwards; the 2nd recurrent nervure is received at the apex of the basal third of the cell. Tarsi spinose; claws dentate near the base. Frontal furrow distinct on the upper half only.

Is not unlike *S. veda*, Cam., but is much larger and has the head entirely black; and the median segment bituberculate laterally.

Odynerus Kuchingensis, sp. nov.

Black, the clypeus, eye incision, a mark above the antennæ, transverse above, its apex obliquely narrowed, a line behind the eyes, not reaching to their end and gradually narrowed, a mark, longer than broad, with straight sides, on the upper basal half of the propleuræ, the two united along the apex of the pronotum by a narrow line; tegulæ, a large mark on the scutellum, slightly narrowed in the middle at the base and apex, a mark, also contracted in the middle, at the base and apex, on the postscutellum, a large mark, on the mesopleuræ below the tegulæ, rounded above and below, longer than broad and slightly, gradually narrowed from top to bottom, and two large marks, rounded above, on the sides of the apical slope of the metanotum and the apices of the abdominal segments (the line on the 3rd narrower than the others), a large mark, longer than broad and almost transverse at the base and apex, on the sides of the 2nd segment near the base and two smaller marks on the base below, yellow. Legs yellow, the 4 front coxæ behind, the hinder except for a mark on the sides, a line on the centre of the middle femora above, the hind femora and the inner side of the hind tibiæ, black. Wings hyaline; the radial cell from shortly behind the middle and the fore part of the 4th cubital cell, smoky; the nervures and stigma black. ♀.

Length 8 mm.

Hab. Kuching. June.

Front and vertex closely and distinctly; the clypeus sparsely punctured; it is longer than broad; its apex depressed in the middle, only very slightly incised, almost transverse. Pro- and mesothorax closely and clearly punctured; the pronotum transverse, keeled on the base; the scutellum sparsely punctured, its apex coarsely longitudinally striated; the yellow part furrowed slightly down the centre. Median segment with an oblique slope, its sides broadly rounded, the centre depressed. Propleuræ punctured like the pronotum; the meso- and metapleuræ more sparsely punctured above, smoth below, Abdomen closely punctured; the 1st segment becomes gradually wider from the base to the apex.

Allied to *O. hyades*, Cam., but is much smaller, wants the yellow lines on the mesonotum and the 2nd recurrrent nervure is not interstitial. *O. lybas*, Cam., is much less strongly marked with yellow and its 1st abdominal segment is raised in the centre and obliquely sloped at base and apex.

Odynerus matangensis, sp. nov.

Black, a line on the scape of the antennæ below, the clypeus, the mandibles except above and at the apex, the anterior tibiæ in front and a narrow band on the apex of the 1st and 2nd abdominal segments all round, yellow. Wings hyaline, the apical two-thirds of the radial and the greater part of the 4th cubital cell smoky; the nervures and stigma black. ♂.

Length 7 mm.

Hab. Matang.

Front and vertex closely, strongly and uniformly punctured, the clypeus more sparsely punctured and covered with white pubescence; it is slightly longer than its greatest width; the apex has a shallow, wide rounded incision. Apical two joints of antennæ brownish beneath, the claw is not quite so long as the joint. Thorax closely rugosely punctured; the apex of the median segment is less strongly punctured; its sides are straight and obliquely narrowed towards the centre, which is furrowed; the slope is almost vertical. Abdomen punctured like the thorax; the basal segment with a stout keel near the base.

Belongs to the group of *O. sicheli*. It is not unlike *O. robertianus*, but that species has the clypeus longer compared with its width, broadly marked with black in the middle, depressed at the apex, which is not so broadly rounded and depressed down the middle, the scutellums have a more distinct oblique slope from the base to the apex, the scutellum in *matangensis* being much more convex and without a distinct slope.

Dielis truscanensis, sp. nov.

Black, the sides of the clypeus broadly—the yellow line becoming slightly broader towards the apex,—the upper part of the mandibles, a line on the pronotum, broadest in the middle, bands on the apices of the basal 4 abdominal segments, commencing from shortly behind the middle and the outer side of the tibiæ, yellow. Wings clear hyaline, iridescent, the nervures and stigma black. Head, thorax, base of abdomen and its ventral surface thickly covered with long white hair; the basal 4 segments fringed with similar; the apical thickly with black, stiffer hair. Ocellar depression with curved striæ on the sides. Mesonotum and sides of scutellums punctured, but not closely or strongly; the metanotum at the base sparsely haired and punctured the rest thickly covered with longish white hair. ♂.

Length 13-14 mm.

Hab. Trusean.

The black basal bands on the 2nd to 4th abdominal segments are slightly dilated in the middle; the wings are slightly infuscated at the apex; the 1st recurrent nervure is straight, not oblique in front, the 2nd roundly curved at the top and bottom; the 2nd transverse cubital is straight and oblique by sloped at top and bottom, the lower (and larger) abscissa having a more oblique slope than the upper; the 2nd abscissa of the cubitus is distinctly less in length than the 3rd and 4th united the apical abscissa of the radius roundly, obliquely curved. Pronotum rounded.

Comes close to *D. fimbriata*, Bur., which may be known from it by the middle of the pronotum being transverse, not rounded, by the 2nd abscissa of the cubitus being longer than the apical two united, by the recurrent nervures not being so widely separated and by the transverse median nervure being more rounded, not obliquely sloped above.

Megachile Wallacei, sp. nov.

Black, the hair on the metanotum, base of 1st abdominal segment, a band on the 2nd and the whole of the apical two segments above covered with whitish hair; the ventral slope bright red; the wings hyaline, the apex slightly clouded, the nervures and stigma black; the hair on the legs black; the basal 4 joints of the hind tarsi covered with bright red hair. ♀.

Length 18 mm.

Hab. Trusean. August.

Vertex distinctly punctured, more strongly and closely in the centre than on the sides; the face similarly punctured, more closely above than below; the clypeus more strongly punctured; the lower part with the punctures more widely separated and the apex impunctate. Mandibles strongly, but not closely punctured; they have 3 teeth; the apical is the longer; the 2nd shorter and bluntly rounded; the 3rd not so clearly separated, longer, broader and blunter. Mesonotum closely and clearly punctured, the punctures round and in places running into reticulations; the base in the centre is less strongly punctured and furrowed narrowly. Scutellum more strongly and similarly punctured. Metanotum smooth. Mesopleuræ closely and distinctly punctured; the meta much more minutely and sparsely punctured. Mesosternum and mesopleuræ thickly covered with black hair; the meta- with longer and white hair. Fore tibiæ with the edges spined; the onter spine longer and sharper than the inner; the middle adn hind calcaria red, the others black.

Mesonotum thickly covered with short black hair; clypeus longer than the face, its apex transverse in the middle, the sides curved, it is sparsely haired; metatarsus not much narrower than the tibiæ which, at the apex on the outer side, projects into a stout spine.

This species belongs to a group which appears to be well represented in Malaya. It differs from *M. bicanaliculata* and *Frederici* in the mandibles having 3, instead of 2 teeth; *M. albocaudata* Friese has 4 mandibular teeth; the number of teeth in *M. miniata* Bingham, (J. Bomb. N. H. Soc. 1890-5), from Sumatra, is not stated.

Megachile Sarawakensis, sp. nov.

Black, the hair black, on the vertex, mouth and sternum white, on the median segment soot-coloured; the wings yellowish-hyaline, the nervures and stigma luteous. ♂.

Length 12 mm.

Hab. Sembulong.

Front, vertex and face closely punctured; the clypeus more closely and finely punctured, the rest more widely and not so strongly as the front; its apex fringed with long pale fulvous hair. Mandibles short and broad; the apical tooth long and sharp-pointed; the 2nd broad, bluntly-rounded, the 3rd indistinct. Thorax closely, minutely punctured, as is also the scutellum; post-scutellum alutaceous. Metanotal area alutaceous, depressed in the centre. Back of abdomen coarsely alutaceous, obscurely punctured, the segments depressed in the middle; the last segment with a shallow incision in the centre; and with 2 distinct, blunt, and an outer indistinct, tooth on either side of the incision; its apex is broadly depressed and the middle is bluntly keeled. Metatarsus narrower than the tibiæ.

Megachile varidens, sp. nov.

Black; the front, vertex and thorax above with rufo-fulvous hair, the hair on the face, clypeus and pleuræ long and white; the abdominal segments with rufous hair bands; wings hyaline, highly iridescent, the apical half clouded with fuscous-violaceous, the stigma and nervures black. ♂.

Length 9 mm.

Hab. Kuching. January.

Front and vertex closely and distinctly punctured, the former less strongly than the latter. Face closely rugose; the clypeus closely punctured, the punctures round, moderately deep and close together; in the centre is a smooth, moderately broad smooth line. Mandibles with 4 teeth; the 1st and 4th much larger than the central and sharp-pointed; the 2nd bluntly rounded, the 3rd longer than it and sharp-pointed. Thorax closely rugosely punctured. Metanotal area clearly defined, alutaceous and with a shallow furrow in the middle; and less closely haired than the rest of the segment, which is pitted. The basal segments of the abdomen closely, but not very strongly; the others more strongly rugosely, punctured; the 1st has the basal slope margined round the top, the 2nd and 3rd and, to a less extent, the 4th transversely furrowed; the last incised; the incision wider than long, with the sides oblique, straight and meeting in the centre; below the last segment is widely depressed in the centre and with the sides keeled at the apex. Legs stoutly; the hinder tibiæ bluntly, roundly projecting at the apex on the outerside.

Is very like *M. borneana* but may be known from it by having 4 distinct teeth on the mandibles. The same character separates it from *M. cæcina* which it closely resembles otherwise.

Nomia bidiensis, sp. nov.

Black, the flagellum of antennæ below and at the apex above, rufous, the hair on the head and thorax pale fulvous; all the abdominal segments with broad pale pubescent bands; the hair on the ventral surface pale, with a slight fulvous tint; wings hyaline, the stigma pale testaceous, the costa and nervures darker. ♀.

Length 7 mm.

Hab. Bidi. December.

Front, vertex and face closely minutely, irregularly reticulated, more closely in the centre than on the sides; the occiput sharply margined. Mesonotum closely punctured, almost reticulated; the centre with an impressed line. Metanotal area stoutly irregularly longitudinally striated and without an apical bounding keel; the apical slope with 2 or 3 irregular longitudinal keels. Pleuræ alutaceous; the meso- with an oblique keel down the middle, behind which it is closely striated; near the apex of the meta- are 2 curved keels, the space between them being striated. The hair on the tarsi is more rufous than on the rest of the legs; the apical 4 joints of the fore tarsi rufous. First and second transverse cubital nervures straight and parallel, the cell being of equal width throughout and distinctly shorter, above, than the following; the recurrent nervure is received shortly beyond the middle; this being also the case with the 2nd the 1st is straight and oblique, the 2nd roundly curved.

Is not unlike *N. bicaniculata*, Cam., that species is readily separated by the different form of the median segment which is much larger and with the apical slope stoutly keeled round the top.

Nomia erythropoda, sp. nov.

Black; the 1st abdominal segment with a piceous band on the apex, the others banded with blue, variegated with orange; the antennal scape, apex of clypeus, labrum and legs ferruginous-red; the hair on the head, thorax, base of abdomen and legs pale fulvous; wings hyaline, the radial and cubital cells smoky, the stigma and nervures black. ♂.

Length 9-10 mm.

Hab. Kinghang. January.

Lower part of front and face keeled in the centre, the former more strongly than the latter; the clypeus distinctly punctured, except at the apex ; the orbits thickly covered with fulvous pubescence and more sparsely with fulvous hair. Mesonotum opaque, minutely punctured ; post-scutellum thickly covered with pale fulvous pubescence. Metanotal area irregularly striated, the central striæ converging inwardly. Hind femora not much thickened ; on the lower side of the hind tibiæ is, at the middle, a raised curved keel, curving obliquely from the inner side to the outer and reaching to the apex, it becoming gradually reduced in size ; tarsi not thickened.

A species easily recognized by the rufous legs and by the oblique keel on the inner side of the hind tibiæ.

The Aroids of Borneo.

BY H. N. RIDLEY.

The island of Borneo is very rich in aroids, and the present list represents doubtless but a small portion of those which will eventually be found by collectors. I have attempted however to make it as complete as I could, and to record all species previously described together with a number collected by myself in a short trip to B. Sarawak, in 1903 and others obtained by Dr. Haviland some years previously. Dr. Engler in Malesia described a number collected by Dr. Beccari chiefly in Sarawak, but though I was working over Dr. Beccari's old collecting ground, I obtained a considerable number which appear to have escaped him.

The chief difficulty in the study of aroids lies in the very bad habit of some botanists and gardeners of describing species from leaves only. Aroids vary very much in the form and venation of their leaves, and leaf descriptions are quite worthless, and have led to great confusion. This is especially the case in Borneo aroids for many species possess very ornamental leaves and have been introduced as cultivated plants, and inadequately described and named.

CRYPTOCORYNE.

This genus of aquatic aroids seems to obtain its maximum development in Borneo though several species occur in India and the Malay peninsula and in islands of the archipelago. All the species in Borneo inhabit the jungle streams and rivers except the tidal river species *C. ciliata*.

C. ciliata, Fischer. Tidal Mud, Sarawak, (Beccari) Bishop Hose.
Common in most of the tidal rivers in mud in the Malay peninsula and islands.

C. ordata, Griff. Sarawak, (Beccari). Borneo (Motley).

Distribution, Malay peninsula and Java.

C. striolata, Engler. Sarawak, (Beccari). Rejang, Sibu (Haviland 2375).

The tube of the spathe which is very slender appears to have been white, the narrow lanceolate limb purple. Fruit on a pedicel $\frac{1}{2}$ inch long sub-globose $\frac{3}{8}$ inch long, seeds $\frac{1}{4}$ inch long curved acute narrow reticulate.

Endemic.

C. grandis, n.sp. Petioles 6 to 14 inches long, leaf blade ovate cordate, obtuse 3-4 inches long, 2-3 inches wide closely and finely dotted and sometimes striolate. Peduncle 1 inch long. Spathe tube 15 inches long $\frac{1}{4}$ inch wide, dilated portion $\frac{1}{2}$ inch long, limb lanceolate caudate $2\frac{1}{2}$ inches long $\frac{3}{8}$ inch wide at base, apparently yellow in the mouth and purple above smooth.

Sarawak. Jungle stream path to Matang (Haviland 2319) Sept. 23. 1892.

Endemic, the biggest species I have ever seen except *C. ciliata.*

C. pallidinervia, Engler. Sarawak (Beccari).

Endemic.

C. longicauda, Engler. Sarawak (Beccari).

Endemic.

C. bullosa, Engler. Sarawak (Beccari).

I saw a quantity of what appeared to be this plant in the river at Bidi, near the Loban Angin, but could see no flowers. Saribas (Haviland 2079).

Endemic. Engler's figure Malesia, pl. 27, i, is of a young spathe. When adult the blade is longer than the tube and very narrow. Fruit white $\frac{1}{4}$ inch wide peduncle 3 inches.

C. Lingua, Engler. Sarawak (Beccari). Rejang Sibu (Haviland 3129).
Endemic.

C. auriculata, Engler. Sarawak (Beccari).
Endemic.

C. spathulata, Engler. Sarawak (Beccari).
Endemic.

TYPHONIUM.

Small aroids usually weeds of cultivation.

T. trilobatum, Schott. Sarawak (Beccari). Bau, (Ridley).

T. motleyanum, Schott. Borneo (Motley).

AMORPHOPHALLUS.

Engler records only one species of this genus from Borneo, but there are doubtless more. They are seldom met with in flower, I found two in leaf.

A. giganteus, Bl. Sarawak (Beccari),
Distrib. Java.

ARISŒMA.

A. umbrina, n.sp. Root stock short with numerous woolly roots. Leaves 4 or 5 ; young ones ovate acuminate entire 3 inches long, 1½ wide ; older ones trifid lobes oblong or lanceolate acuminate, 5 inches long 1¼ inch wide, base narrowed into a petiolule ½ inch long, tip acute with a slender awl-shaped point ¼ inch long, side lobes macquilateral nearly sessile, nerves 3 or 4 pairs joining an intramarginal one, petiole 5 inches long, all light green. Peduncle 7 inches long, spathe tube green 1¼ inch long, limb ovate 1-1½ inch long, tipped with a slender point ¼ inch long, deep brown spotted with light green. Spadix appendage filiform 2 inches long green. Male flowers in groups of 4 or 5, stamens shortly stalked, numerous.

Borneo, Sarawak. Matang, alt. 1500 feet.

A very distinct plant with its dark brown hood spotted with yellowish green.

A. filiforme, Bl., var. *chlorospatha*, Hallier.

Central Borneo at Liang Gagang, (Hallier).

HOMALOMENA.

H. (§ *Eu.-homalomena*). *paludosa* Griff. Sarawak, Kuching (Barttelt).

Common in the Malay peninsula.

H. sagittifolia, Jungh. Sarawak on Matang (Ridley).

South Borneo Mt. Gintang (Korthals) Labuan (Motley).

var *pontederiæfolia*. Sarawak Kuching (Haviland 3134).

H. propinqua, Schot, to which Engler refers the plants collected by Korthals and Motley quoted above is probably this species which is common in the Malay peninsula.

H. Beccariana, Engler. Sarawak (Beccari).

Engler describes this as allied to *H. rostrata* Griff, and *H. Miqueliana* Schott and suggests that the three might be combined into one species, *H. Miqueliana* Schott is based on a plant collected by Korthals in Southern Borneo.

H. insignis. Ill. Hort 1885. t 560.

Introduced from Borneo. From the description in Nicholsons Dict. Gardening Supplement, this seems near *H. paludosa.*

H. Sarawakensis, n.sp. Stem woody creeping ascending with long roots. Petioles 3-4 inches long rather slender sheath 2 inches long red, blade oblong lanceolate cuneate at the base narrowed into the petiole tip acute 5-7 inches long, 3 inches wide, primary nerves 6 or 7 pairs, not very district Peduncle 4 inches long more slender than the petiole, Spathe 2 inches long constricted above the female inflorescence, swollen basal part longer than the narrower upper part.

Sarawak Bidi (Ridley 11714).

Endemic.

H. Borneensis, n. sp. Stem stout petiole 7-7½ inches long sheathing about half its length, blade ovate base broad rounded, apex cuspidate, nerves 8 pairs conspicuous on the under surface, alternate 8 inches long, 6 inches, wide. Peduncle 6 inches long, Spathe 4 inches long, constricted above the middle thick nearly an inch through below, blade shortly cuspidate. Spadix rather slender, male portion 1¼ inch long white, upper part of female nude or with scattered female flowers, 1 inch long.

Sarawak Kuching (Ridley).

Endemic, near *H. sagittifolia* Jungh. but the leaves are not at all cordate.

H. aromatica, var. *cordata* Schott.

Sarawak. (Beccari). Kwala Kapuas, (Grabowski) (Engler Malesia 282).

These plants are probably *H. caerulescens* Jungh, a common Malay peninsula and Javanese plant, but it is possible that this species is only a form of Roxburgh's *H. aromatica* which is only recorded from Tencasserim and Chittageng.

H. Havilandi, n. sp.

Petiole slender 6 to 8 inches long very shortly sheathing, blade ovate with a broad indented base, hardly cordate apex cuspidate 8-10 inches long 5-6½ inches wide, nerves very unnumerous fine and inconspicuous. Peduncle slender 5-6 inches long, spathe narrow 2 inches long ¼ inch wide slightly constricted above the female portion. Male portion slender 1½ inch long. Female shorter ½ inch.

Sarawak Bongo range near Penkalan Ampat (Haviland 102). Endemic.

The form of the leaves is that of *H. borneensis* but the venation is very close and fine, there being practically no primary nerves. The spadices are also much smaller and narrower but in the specimens are quite young.

H. fasciata, n. sp.

Leaves solitary narrow lanceolate long acuminate 6-7 inches long 1½ inch wide narrowed to the base above deep green with a central white feather, beneath pale green, with 8 pairs of elevated nerves, petiole 7-8 inches long slender terete. Spadices rising from a basal narrow sheath 3 inches long, peduncle 1½-2 inches long slender spathe 1¼ inch long curved base swollen ⅜ inch through, above narrowed acuminate all pale green. Spadix little shorter, terminal portion cylindric acuminate ⅝ inch long white of sterile hexagonal flowers, below ¼ inch narrower of oblong male flowers, 4 celled anthers, below a whorl of white irregular sterile flowers, then a short bare portion, and whorls of green subglobose sessile, pistils with a shore thick style and punctiform stigma.

Sarawak. Bidi Woods, fl. Oct. 1903 (Ridley).

Endemic. A pretty plant, which I brought alive to Singapore and flowered in the Botanic Gardens.

H, saxorum, Miq.

Borneo (Korthals).

H. truncata, Hook. fil ?

Chamæcladon truncatum, Schott., var. *deltoideum*, Engl.

S. Borneo. Kapuas on the river, Riam Horas (Grabouski).

There is same doubt as to whether this plant is the same as Hooker's *H. truncatum*, a native of Mergui.

H. ovalifolium, Ridl. *Chamæcladon ovalifolium*, Schott.

Borneo (Korthals).

H. (§ *Chamæcladon*), *paucinervia*, n. sp.

Stem about 4 inches tall with long roots. Leaves numerous lanceolate gradually tapering from the middle to the base apex subacute, pale beneath 3½ inches long 1 inch wide, primary nerves 4 pairs alternate, petiole slender 1-2 inches long, sheath short broad red ¼ inch long. Spathes small ½ inch long on a very slender peduncle of equal length, spathe oblong with a short beak. Spadix a little shorter, male portion fourtimes as long as the female cylindric. Female flowers very few in two or three whorls. Pistil ovoid, stigma discoid.

Sarawak, Matang (Ridley).

One of the narrow leaved wet rock species after the style of *H. angustifolium* and as near the *Chamæcladon pygmaeum* of Engler's Araceæ No. 96 as anything but differing not only in foliage but in the very few female flowers.

H. intermediam, n. sp.

Stem 1 inch long with numerous thick grey roots. Leaves numerous obliquely elliptic acute minutely mucronate at the tip, narrowed slightly toward the base 5 inches long 2 inches wide or smaller. Nerves fine about 14 pairs, secondary nerves few and indistinct, petiole slender 2-2½ inches long, sheathing for about ½ its length. Peduncle of spadix 3 inches long slender, Spathe 1-1½ inch long nearly ¼ inch through narrowed above the female portion about half way up, and cuspidate at the tip.

Sarawak, Matang (Ridley) Endemic.

This plant is about the size and habit of *H. Griffithii* but very different in its their textured fine nerved leaves and the long slender peduncles, and spathe narrowed in the middle. It seems to be intermediate between the section *Euhnomalomena* and *Chamæcladon*.

H. crassinervia, n. sp.

Petioles stout 6 inches long, sheathing for more than half their length, blade lanceolate acuminate base unequal narrowed 11 inches long 3 inches wide, keel thick primary nerves about 20 pairs, secondary nerves very numerous with short transverse bars. Peduncle 3 inches long, spathe 3 inches long, constricted a little above the middle lower part broad and thick limb of spathe with a cusp $\frac{3}{8}$ inch long spadix $2\frac{1}{2}$ inches long. Male 1 inch portion rather slender cylindric. Stamens moderately large, a short narrowed portion of abortive flowers between that and the female portion. Pistils in about 20 whorls.

Sarawak. Matang (Ridley). Endemic.

H lancea, n. sp.

Stem short. Leaves few petiole slender 6-8 inches long, sheathing from 2-3 inches blade lanceolate acuminate with a long point narrowed at the base into the petiole 7 inches long, $1\frac{1}{2}$ inches wide rather their nerves ascending rather distant 5 pairs distinct on the lower surface, alternate, no visible transverse reticulations. Peduncle 4 inches long rather slender. Spathe thick 2 inches long constricted above the female part of spadix, rather more than $\frac{1}{2}$ its length, tip shortly cuspidate male portion of spadix rather slender, anthers small.

Sarawak, Matang (Ridley). Endemic.

H. ovata, Engler. Sarawak (Beccari).

H. subcordata, Engler. Sarawak (Beccari).

H. punctulata, Engler. Sarawak (Beccari).

H. (§ *chamæcladon*) *pumila*, var. *purpurascens*. *Chamæcladon pygmaeum*, Engl. ?

Borneo (Korthals); Sarawak, Matang (Ridley); S. Borneo, Kapuas (Grabowski).

var. *latifolium*, (Engler).

Sarawak (Beccari).

This little plant is common in the Malay Peninsula. The plant distributed by Engler under his number and figure (Araceæ 96) does not seem to be this species.

H. Griffithii, Hook. fil. Borneo (Motley).

var. *obliquatum*, *H. obliquatum* Hook. fil., *Chamæcladon obliquatum* Schott.

Sarawak (Beccari).

var. *acuminata.* Leaves ovate with a long point, or elliptic acuminate, nerves less conspecious than in typical *H. Griffithii.*

Sarawak. Bau (Ridley 11713).

This plant in the form of leaf approaches *H. trapezifolia*, Hook, fil., but has the small spathes of *H. Griffithii*, which is a most variable plant, several forms of which have been separated into species on account of the form of the leaf, I have seen nothing exactly like this variety from the Peninsula, but hardly like to separate it as a species.

H. humiliis, Hook. fil.

Is recorded from Borneo in the flora of British India but without specific locality or collector's name. It is common in the hills of the Malay Peninsula.

AGLAONEMA.

A. palustre, Teysm. Sarawak (Beccari).

Common in the tidal mud of the Kuching river, (Ridley).

Distrib. Malay Peninsula, Sumatra.

A. schottianum, Miq. Sarawak (Beccari), Matang (Ridley); Southern Borneo (Korthals *fide* Engler).

A. pictum, Kunth. Sarawak (Beccari).

Malay Peninsula.

A. oblongifolium, Schott. Sarawak (Beccari); Kuching (Haviland 972), Road to Bau, Ridley.

Common, Malay Peninsula.

COLOCASIA.

C. antiquorum, Schott. Sarawak (Beccari).

A common cultivated plant, probably not native in this part of the world.

C. gigantea, Hook. I saw plants of what I believe to be this at the Byte Estate near Sandakan, British North Borneo.

ALOCASIA.

A indica, Schott. Sarawak (Beccari).

A common cultivated plant. Var. *metallica*, Borneo (Miquel).

A. macrorrhiza, Schott. Sarawak (Borneo).

This is a commonly cultivated plant.

A. Lawii, Hook. fil. Common, on limestone rocks, Ball. Sarawak (Ridley).

A. Lawii is comomn on limestone rocks in Borneo and in the Malay Peninsula, and Beccari could hardly have failed to find it.

A. denudata, Engler. Matang.

I found very fine plants of this common Malayan plant on Matang, which though not in flower at the time of my visit were certainly this species. The variety *Thibautiana*, Hart, with white reticulating views occurs in Borneo.

A. longiloba, Miq. Sarawak (Beccari), is almost certainly this plant. Miquel's discription however is not complete enough to determine what he meant.

A. Beccarii, Engler. Sarawak (Beccari). Matang at the top (Ridley).

Distrib. Malay Peninsula.

A. Korthalsi, Schott. Sakumbang (Korthals).

A very little known species, described only from leaf specimens.

A. scabriuscula, N. E. Brown, Gard. Chron. 1879, II. 296.

Introduced into cultivation from Borneo.

A. cuprea, Koch. Locality unknown.

Introduced into cultivation from Borneo.

A. Villeneuvei, Lind. and Rod. Ill. Hort, 1887, p. 59, Pl. XXI. Sarawak, Bau (Ridley 11715).

This has dark green leaves, with the petioles spotted with dark brownish red. The flowers are not known, but the spathe in fruit is about 1 inch long and ¾ inch wide, white or rose pink, on a peduncle 5 inches long.

SCHISMATOGLOTTIS.

Sch. barbata, Engler. Sarawak, Kuching (Beccari).

Sch. crispata, Hook. fil. Sarawak, Bau, etc. (Ridley).

Sch. asperata, Engler. Sarawak (Beccari)

var. *albomaculata*. Sarawak, (Beccari).

Sch. Beccariana, Engler.

var. *oblonga*. Sarawak (Beccari).
var. *cuspidata*. Sarawak (Beccari).
var. *albolineata*. Sarawak (Beccari).
var. *angustifolia*. S. Borneo, Kapuas Grabourki.

Apparently a common and variable plant but I have failed to recognise what was intended by this species.

Sch. modesta, Schott. Borneo (Korthals).

Common near Sungei Assun, Kapuas (Hallier).

Sch. calyptrata, Zoll and Mor.

Form *concolor*. Mid Borneo, at Amai-Ambit and Liang Gagang (Hallier).

Form *trivittata*. Central Borneo (Hallier).

A common species in the Malay Peninsula and over the Archipelago.

Sch. variegatar. Of Gardens, is said, Nicholson's Dictionary of Gardening, to be *S. neo-guineensis* which is a variety of *S. calyptrata*. It was introduced from Borneo.

Sch. pusilla, Engler. Sarawak (Beccari).

West Borneo (Jagori, fide Hallier).

Sch. acuminatissima, Schott. var. *concinna*. South Borneo (Korthals).

Probably a form of *S. calyptrata* says Engler, but the description which is very incomplete hardly fits any form of that species.

Sch. decora, Bull, Gard. Chron. 1884, t. 711. Borneo.

Sch. ovata, Schott. Borneo (Korthals).

Sch. conoidea, Engler. Sarawak (Beccari).

Sch. Motleyana, Engler. *Apatemone Motleyana*, Schott. Labuan (Motley).

Sch. longispatha. Bull. Cat. 1881. Ill. Hort. XXIX t. 466.

I obtained this pretty species in the Bidi Woods, Sarawak, and it flowered in the Botanic Gardens in Singapore, in March and April, 1904. The leaves are broad, dark green with a central white bar. The spadix is 3 inches long, the spathe greenish white, of which the tubular portion is 1½ inch long. The appendage of the spadix cylindric subacute white ¾ inch long of irregular abortive flowers. Male portion short ¼ inch long, anthers one- rarely 2-celled. Female flowers more numerous thick oblong green, stigma pulvinate, sessile, abortive flower few irregularly flattened club shaped or spathulate tipped pink, little shorter than the pistils.

Sch. multiflora, n. sp.

Rhizome short thick with numerous leaves. Leaves dark green lanceolate acuminate, narrowed at the base, 8-9 inches long, 2-3 inches wide. 14-18 nerved, petiole 6 inches long purple, numerous red brown sheaths at the base spadix, On a peduncle 2 inches long. Spathe at first narrow acuminate 4-5 inches long white, tubular portion 1 inch long pale green limb recurved, when open broadly lanceolate acuminate. Male spadix cylindric 3 inches long, flowers very numerous, all fertile, no appendage of barren flowers. Flowers oblong, anther cells distant. Female portion 1 inch long no nude portion between, pistils ovoid narrowed slightly upwards towards the discoid stigma.

Sarawak, Matang, in rocks in a stream abundant, (Ridley 11582) Endemic. Remarkable for its long spadix and very numerous flowers.

Sch. pulchra, N. E. Br.

Rhizome short, leaves ovate acuminate base narrowly cordate 3½ inches long 2 inches wide, petiole 2 inches long back rounded edges above straight sheath short and broad sides patent, tips rounded, blade light green mottled frey. Peduncle very short. Spathe 1½ inches long base dark green ¾ inch long carried down the peduncle and adnate to it, lamina 1 inch long pale green cuspidate. Spadix nearly as long as the spathe, appendage cylindric ⅜ inch long obtuse white of irregular ovoid bodies, male portion narrower ½ inch long anthers lobed of 2 distant cells, rather scattered, then a few abortive females. Female portion as long as the male. Pistils oblong shortly stalked, stigma discoid, about 7 irregular rows of females rather distant. Back of female portion adnate to stipes. Sarawak at Bidi (Ridley). This plant originally described from cultivated plants, was sent to the Botanic Gardens Singapore by Mr. Chatterjee of Calcutta as *Sch. crispata* from which however it is very distinct.

Sch. caulescens, n. sp.

Stem 2-4 inches long, base rooting, upper part ascending, with alternate leaves a quarter of an inch apart. Leaves elliptic lanceolate to ovate subacute at the tip, base rounded 2-4 inches long 1-1¼ inch wide, minutely pustular on both surfaces, nerves primary 10 pairs, midrib scurfy, the basal nerves run parallel to the edge forming a distinct margin at the tip, petiole 1½ inch long or much shorter in the upper leaves sheathing for from nearly one half of its length in the lower leaves, to ¾ of its length in the upper shorter petioles, tips of sheath free. Spathe from the upper axil, on a peduncle about ½ inch long slender, base of spathe ¾ inch long narrowed to the base. Spadix slender 1 inch long male portion slender cylindric flowers apparently fertile to the tip.

Sarawak, Bidi. (Ridley).

Apparently allied to *Sch. conoidea* Engl. but the long petioles distinguish it from this. The elongate stem is unusual but does occur in the genus.

As often happens in *Schismatoglottis* I was unable to find fully developed spadices in several species. One plant collected at Bau in Sarawak seemed closely allied to *S. brevipes* Hook. fil and *S. wallichii* of the Malay peninsula but had remarkably long petioles over 6 inches long with an ovate often cordate leaf 3 inches long beneath, and blotched with dark green above. Another of the same section had leaves as large as those of *Sch.*

Wallichii but very short petioles sheathing for half the length or more. The spathe complete but too much crushed in drying resembles that of *Sch. calyptrata* Zoll. I met with it on Matang. A plant closely allied to the last named species was met with at Bau and may possibly be a form of *S. calyptrata*. The leaves are broadly ovate elliptic, and cordate at the base, the lobes rounded and very close together.

PIPTOSPATHA, N. E. BR.

P. insignis, Br. Sarawak, Lundu (Micholitz).

P. marginăta, Engler. Sarawak (Beccari).

P. elongata, Engler. Sarawak (Beccari). S. Borneo, Kapuas (Grabowski).

Distrib. Malay Peninsula.

P. Grabowskii, Engler. Sarawak. Rejang Belaga (Haviland). S. Borneo, Mindai-Pramassan, on the river Telanakan (Grabowsky).

MICROCASIA, BECC.

M. pygmœa, Beccari. Sarawak (Beccari).

M. elliptica, Engler. Malesia, vol. I. TXXV f. 2-8. Sarawak (Beccari).

ANADENDRUM, SCHOTT.

A. montanum, Schott. Sarawak (Beccari).

Common in the Malay Peninsula from Tenasserim southwards.

A. affine, Schott. Sarawak (Beccari).

SCINDAPSUS.

Sc. pictus, Hassk. Cat. Bogor 1844-58. Sarawak in Woods (Ridley). Near Tegora (Haviland 2568).

Common in the Malay Peninsula. Haviland's plant is a very small form.

Sc. hederacea, Schott. South Borneo (Korthals).

Sc. crassipes, Engler, and the var. *Beccarii*, (*Sc. Beccarii* Engler). Sarawak (Beccari), Limestone rocks, Bau (Ridley), common. On rocks Malay Peninsula.

Sc. geniculatus, Engler. Sarawak (Beccari).

Sc. coriacens, Engler. Sarawak (Beccari).

Sc. longipes, Engler. Sarawak (Beccari).

Sc. rupestris, n. sp.

Stems $\frac{1}{4}$ inch through creeping on the ground. Leaves erect 3-4 in a tuft long petioled, blade coriacious lanceolate acuminate acute base broad or slightly narrowed 5-7 inches long 1-$1\frac{3}{4}$ inch wide, primary nerves hardly more conspicuous than the secondary ones, no transverse nervules, secondary nerves numerous and close, petiole 6-8 inches long rather slender ribbed, sheathed for $\frac{3}{4}$ its length, sheath narrowed papery, knee small $\frac{1}{4}$ inch. Spathe boat shaped white 1 inch long $\frac{3}{8}$ inch through subobtuse on a peduncle 2 inches long. Spadix $\frac{3}{4}$ inch long cylindric blunt sessile. Pistils rounded small. Stigma sunk elliptic.

Sarawak Bau (Ridley 11853). Creeping on limestone rocks at Bau.

Sc. Havilandi, n. sp.

Stem $\frac{1}{6}$ inch through. Leaves long petioled blade their lanceolate long acuminate base cuneate 9 inches—12 long $2\frac{1}{4}$-$2\frac{1}{2}$ wide, primary nerves 10 pairs fine but distinct, secondary nerves numerous fine, transverse nervules fine distinct but few, petiole 4-8 inches long slender sheathing narrowly about $\frac{1}{3}$ of its length. Spadix peduncle 1 inch long. Spathe oblong boat-shaped 2 inches long $\frac{3}{4}$ inch wide beaked. Spadix $1\frac{1}{2}$ inch long thick cylindric nearly sessile. Pistils rounded rhomboid. Style short but distinct and columnar. Stigma discoid.

Sarawak Saribas (Haviland 2089).

July 1892. Endemic.

RAPHIDOPHORA.

Species with entire leaves.

R. Lobbii, Schott Bonplandia V. p. 45. Borneo (Korthals). Common in the Malay Peninsula.

R. sylvestris, Engler Prodr 239. Sarawak (Beccari), and var *obtusata*, same collector.

Distrib. Java, New Guinea.

R. Peepla, Schott. Bonplandia V. 1857 p. 45. Kapuas River at Tumbangtliang (Grabowski).

Distrib. India, Ceylon and Moluccas.

R. minor, Hook. fil. Sarawak, Kuching scrambling over bushes near the river. Common in the Malay Peninsula.

R. migrcscens, n. sp.

Stem woody stout flexuous $\frac{3}{8}$ inch through angled, internodes $1\frac{1}{2}$ inch long. Leaf coriaceous drying black, blade oblong lanceolate acuminate somewhat oblique, base rounded 7 inches long by 2 wide, nerves very fine and close, primary ones not distinct, petiole 3 inches long grooved rather slender hardly winged at all. Knee short and thick. Peduncle stout $2\frac{1}{2}$-3 inches woody. Spathe not seen, spadix 3 inches long very thick cylindric blunt. Pistils rounded 6 angled at the tip. Style none. Stigma round sunk, pulvinate.

Sarawak, Matang (Ridley, Bartlett).

Bartlett's specimens have narrower more lanceolate leaves, but it is evidently the same plant and from the same locality.

R. elliptica, n. sp.

Leaf elliptic coriaceous apex mucronulate base rounded 6-7 inches long 3-2½ wide nerves very numerous and fine, primary nerves no stronger than secondary ones, petiole 5-6 inches long, narrowly sheathed to the base of the blade. Peduncle about 1 inch long, spathe 3-4 inches long ½ inch thick boat-shaped cuspidate, cusp ½ inch long. Spadix stout sessile. Pistils rounded at the top obscurely hexagonal, stigma round sunk.

Sarawak Bau (Ridley). Allied to *R. Maingayi*, and *R. pteropoda* Teysm. Endemic.

R. fluminea, n. sp.

Stem creeping ⅙ inch through. Leaves elongate lanceolate gradually acuminate narrow base acuminate 12-15 inches long 1-1½ wide midrib prominent, primary nerves very numerous about 20 pairs, transverse nervules conspicuous on the back, petiole slender 3-4 inches long sheathing only at the base, knee ¼ inch, long. The blade bent at an angle with the knee. Peduncle 2½ inches long slender, spathe 1½ inch long boat-shaped cuspidate cusp ⅜ inch long. Spadix as long as the body of the spathe, cylindric ⅙ inch thick pistils very small 1/16 inch across rounded 6 angled. Stigma slightly elevated pulvinate.

British North Borneo. At Bongaya, creeping on rocks over hanging the Labuk river (Ridley). Endemic.

Species with Pinnatifid Leaves.

R. Huegelii, Schott. Sarawak, (Beccari). Distrib. Malay Peninsula.

R. maxima, Engler. Bull. Soc. Tosc. di Rt. 1879,269. Sarawak (Beccari). Distrib. New Guinea.

R. Beccarii, Engler. Sarawak (Beccari). Distrib. Malay Peninsula.

R. tenuis, Engl. Jahrb. 1. 181. Sarawak (Beccari). Matang near the top (Ridley).

LASIA.

L. spinosa, Thw. Sarawak (Beccari).

A common tidal-mud plant occurring in India, China the Malay Peninsula and Islands.

CYRTOSPERMA.

C. lasioides, Griff. *C. merkusii*, Schott. Sarawak, (Beccari).

Common in damp open country all over the Malay Peninsula.

C. ferox, Linden and N. E. Br.

Introduced from Borneo and figured in the Illustration Horticole. I met with a plant much resembling this in dense forests in Sungei Siput, Perak, in a jungle stream.

PODOLASIA.

P. stipitata, N. E. Br.

First introduced from Borneo by Mr. Curtis, and described in the Gardener's Chronicle in 1892. It inhabits dry woods usually at an elevation of about 2000 feet and occurs in many parts of the Malay Peninsula.

POTHOS.

P. Barberianus Schott., Aroid I. p. 24, t. 53.

Labuan (Barber, Motley). Sarawak (Beccari). Distrib. Malay Peninsula.

P. leptostachyus, Schott., Prodr. 571. Borneo (Motley.) Distrib. Java.

P. Beccarianus, Engler. Prodr. 92. Sarawak, (Beccari).

P. Motleyanus, Schott., Aroid. 1. 25, t. 55. Borneo (Motley and Barber).

P. insignis, Engl. Sarawak (Beccari).

P. brevistylus, Engl. Sarawak (Beccari) near Kuching (Haviland 971).

P. longus, n. sp.

Shrub, stems 1/16 inch through. Leaves elliptic long acuminate base narrowed or not 6-7 inches long 1½ inch wide, keel strongly elevated, marginal nerve not far from the edge, nerves five numerous, reticulations fine distinct, petiole (knee) ¼ inch long, sheath 2 inches long narrow prolonged above the knee. Peduncle graceful decurved 2½ inches long. Spathe linear subacuminate mucronulate 9 inches long. ⅜ inch wide. Spadix terete 6 inches long, on a slender stalk ½ inch long. Petals and sepals with very narrow elongate tops much longer than wide. Stamens very small reniform 2 celled. Stigma small pulvinate not supported on a style.

Sarawak four miles from Kuching; (Haviland d. 9. p.f. 934).

This is remarkable not only for its very long spathe and spadix, but for the curious narrow long tips of the perianth lobes which are almost linear (grey edged paler when dry) and hardly one-fourth as wide as they are long.

New and little known Malayan Plants.

Series II.

By H. N. Ridley.

This is another contribution to the knowledge of plants of the Malay Peninsula and adjacent countries, some species of which have been collected by myself, others by Dr. Gimlette in Kelantan, Mr. Rostado in Tringanu, Mr. Machado in Perak and Mr. Burnmurdoch in the rich forest of Semangkok Pass in Selangor. The most remarkable discovery is that of an indigenous species of Palmyra Palm, *Borassus*, by Mr. Machado in the forests at Kamuning.

New Plants.

ORCHIDEÆ.

Oberonia gracillima, n. sp.

Stem an inch long or less, often almost stemless. Leaves four or five ensiform acute 1½ inch long ⅛ inch wide. Spike very slender 3 to 4 inches long glabrous base nude for ¼ of its length. Bracts lanceolate acute entire longer than the ovary. Flowers minute, whorled 5 or 6 in a whorl. Sepals oblong obtuse recurved entire. Petals broader ovate toothed, all whitish. Lip orange oblong bifid at the tip with a wide sinus between the acute tips, edges minutely toothed, auricles short rounded.

Tringanu at Bundi (E. Rostado).

This little orchid is allied to *O. prainiana* but has a very different lip.

Saccolabium (§ *Cleisostoma*) *suffusum*, n. sp.

Stem stout 6 inches long ½ inch through. Leaves fleshy 6 inches long 1 inch across, light green, lorate obtuse, unequally rounded bilobed. Panicle lax few branched 18 inches long, branches 3 or 4. Flowers numerous $\frac{1}{4}$ inch long to the tip of the spur, pedicel $\frac{1}{8}$ inch long sepals lanceolate acute yellow suffused with brown. Petals narrower linear. Lip fleshy porrect, spur cylindric horizontal obtuse, side lobes short oblong obtuse, midlobe hastate tongue shaped fleshy obtuse with an erect tooth towards the tip. Callus in the spur-mouth thick and large decurved fleshy with two crura from the back attaching it to the back wall of the spur. No septuma. Column short, broad. Anther broad oblong. Pollinia globose, pedicel linear oblong, disc ovate acuminate.

Perak at Kamuning, Sungei Siput (A. D. Machado).

Saccolabium bicrure, n. sp.

Stem stout 3 inches long, roots long, leaves coriaceous lorate blunt distinctly retuse 4 inches long $\frac{3}{4}$ inch wide. Panicle 8 inches long branches few, peduncle rather stout. Flowers rather distant $\frac{1}{4}$ inch across. Bracts fleshy ovate persistent short. Sepals oblong obovate obtuse fleshy. Petals narrower linear oblong all olive yellow. Lip violet, side lobes quadrate with an oblong limb, midlobe fleshy ovate cordate, tip rounded fleshy, grooved above with a fleshy central ridge running back to the back wall of the spur and ending in a thickened pubescent callus and a septum of the spur. Dorsal callus a broad curved fleshy ridge pubescent at the top. Column broad short, with two vertical oblong quadrate rostellar wings, porrect. Anther large and broad with a Λ shaped ridge on the tip front broad truncate retuse. Pollen elliptic with a short broad pedicel and a disc of 2 very large truncate oblong porrect wings.

Borneo, Sarawak (Matang) on coffee trees. H. N. Ridley.

Saccolabium ramosum, n. sp.

Leaves lorate 7 inches long $\frac{3}{4}$ inch wide blunt obscurely unequally bilobed. Panicles over 6 inches long of 3 slender long branches. Flowers numerous ¼ inch long to tip of spur, yellow with brown stripes, sepals lanceolate, lateral ones oblique keeled the keel running out into a mucro petals much smaller and thinner. Lip shorter than sepals, side lobes falcate acute, midlobe lanceolate with a callus on the tip, dorsal callus reniform laterally flattened. Spur long straight narrow cylindric obtuse. Column oblong quadrate with short truncate arms. Anther small thin ovate. Rostellum arms shorter than column arms oblong quadrate truncate.

Sarawak, Bidi, cultivated in a garden, but collected in the neighbourhood (Ridley).

This species seems most closely allied to *S. javanicum* Smith.

Dendrocolla alba, n. sp.

Stems 3 to 4 inches long, with long slender and numerous roots. Leaves lorate fleshy dark green 1 to 2 inches long ¼ inch wide, obtuse. Scapes 4 inches long slender green raceme ¼ inch long thickened. Bracts ovate acuminate quaquaversal flowers 1 to 2 open at a time, ¾ inch across, expanding widely white, pedicels ¼ inch long. Sepals lanceolate acute. Petals narrower and shorter, narrowed at the base. Lip ¼ inch long saccate, lateral lobes curved short blunt distinct edged with clubbed hairs, midlobe little longer rounded blunt excavate, base of lip saccate grooved, callus in centre of the lip at the base of the midlobe oblong truncate; white with light brown blotches in the saccate portion and light brown spots on the side lobes and midlobe outside, and on the tip of the callus. Column oblong white with a narrower free foot blotched pale brown. Anther skull shaped. Pollinia ovoid, pedicel very short and broad.

Perak Kamuning, Sungei Siput (Machado) on old coffee trees. This pretty little plant with its numerous scapes bearing one or two white star like flowers at a time is allied to *D. trichogottis* Ridl. the common Singapore plant, and much resembles it when out of flower. The flowers are larger and quite white, not of the yellowish color of the common species, and the lip is different.

D. ciliata, n. sp.

Stem an inch or more long. Leaves crowded dark green fleshy 6 elliptic obtuse narrowed a little to the base 2½ inches long ¾ inch wide. Scape slender 2 inches long racemose part not thickened. Bracts minute ovate acute rather distant flowers opening singly, pedicel ¼ inch long green. Sepals oblong obtuse hyaline yellow tinted orange ¼ inch long. Petals narrower and shorter lip as long, side lobes erect rather long oblong white edged with long hairs, midlobe short conic fleshy all whitish. Column short, no foot or arms, anther helmet shaped beaked deep orange red. Pollinia 2 orange color ovoid shortly stalked, pedicel oblong flat indented at the sides disc about ½ its length triangular pale orange yellow, Clinandrium flat with 2 orange triangular thin flaps.

Perak Kamuning (Machado). Occurs with the last.

Trichoglottis valida, n. sp.

Stem 2½ feet long, stout. Leaves elliptic fleshy blunt 3 inches long 1¼ inch wide, sheaths ribbed ½ inch long. Flowers solitary from the base of the internodes with a few small ovate to bracts at the base, pedicel slender ⅜ inch long. Sepals falcate obtuse spathulate ⅝ inch long. Petals obovate spathulate obtuse broader at the tip, all yellow with red blotches. Lip half as long as the sepals, lateral lobes oblong obtuse taller than the column, between them and parallel with the column an ovate oblong pubescent callus flat and thin, midlobe oblong with a round tuft of yellow hairs tip deflexed acute, spur very short blunt. Column short straight thick with a short erect tooth on either side, (apparently crimson) Pollinia globase.

Borneo, Sambas River. (Micholitz).

Acriopsis borneensis, n. sp.

Plant forming a dense mat with innumerable slender roots. Pseudobulbs ½ inch long oblong elliptic somewhat flattened dull green leaves 2 rarely 3 elliptic obtuse dull dark green rather fleshy 1 inch long ½ inch wide. Scape lateral 6 inches long with about 25 flowers rather crowded. Pedicels ¼ inch long. Dorsal sepal narrow hooded oblong subspathulate ¼ inch long. Laterals connate into a similar shaped organ. Petals obovate spathulate blunt broader, all yellow with dark red spots on the back faintly showing through. Lip a little longer than the lower sepals, free portion of base narrow linear greenish yellow, limb pandurate, side lobes triangular subacute spreading, midlobe obovate rounded callus on base of the midlobe oblong truncate with very short teeth retuse and grooved almost double, all white pubescent with a little violet on the callus and centre of the lip. Column as tall as the dorsal sepal, clinandrium with a long oblong truncate bilobed hood dull red apex yellow. Rostellum conic acuminate almost subulate dull red tipped yellow as long as hood and well below it, stigmatic arms longer thick tips flattened dull red tipped yellow. Pollinium single pearshaped yellow forming an angle with the very narrow long filiform pedicel, disc very small yellow, base of column pale green.

Borneo Sarawak; on Matang, collected June, 1903, flowered H. B. Singapore, March, 1904.

Allied to *A. purparea* Ridl. and *A. densiflora* (Lindl.) but very distinct in the form of the lip. The coloring resembles that of *A. Ridleyi.*

SCITAMINEÆ.

Glabba unifolia, n. sp.

Rhizome creeping and throwing up stems 2 inches apart, stems 4 to 6 inches, tall, covered with pubescent sheaths ½ to 1 inch long. Leaf solitary erect ovate acute glabrous 6 to 8 inches long 3 inches wide narrowed to a petiole $\frac{1}{2}$ to 1 inch long. Panicle from the axil of the leaf decurved, dense, 2 inches long, pubescent. Bracts oblong ovate pubescent, $\frac{1}{2}$ inch long calyx funnel shaped $\frac{1}{8}$ inch long with very obscure teeth, unequally bilobed pubescent. Corolla tube twice as long, lobes oblong hooded. Staminodes similar. Lip very short subspathulate bilobed apices rounded. Filament long slender nearly $\frac{3}{4}$ inch long, anther spurs 4 linear acuminate acute, the upper ones larger than the lower ones.

Tringanu, Bundi (E. Rostado).

This belongs to quite a distinct group of Globbas, remarkable for the solitary erect leaf, from below which hangs the dense short panicle. An allied species was obtained by Dr. Keith at Bangtaphan in Siam.

Camptandra angustifolia, n. sp.

Small tufted plant, 3 or 4 inches tall. Leaves lanceolate acuminate dark green $2\frac{1}{2}$-3 inches long 1 inch wide narrowed at the base. Petiole $\frac{1}{2}$ inch long. Bracts ovate acute convolute $1\frac{1}{4}$ inch long, green, one or two on a stem. Inner bract. (Bracteole) $\frac{1}{2}$ inch long enclosing a single flower. Calyx tubular white shortly 3 lobed, lobes ovate ciliate at tip $\frac{1}{4}$ inch long, corolla $\frac{3}{4}$ inch long, white tube dilate upwards, lobes oblong white at tip, under $\frac{1}{2}$ inch across. Lip obovate rounded, bilobed, lobes rounded 2, thickened yellow ridges in limb. Staminodes oblong spathulate. Anther long curved white, as in *parvula*. Stigma large white.

C. parvula var. *angustifolia*, Ridley, Journ. Roy. As. Soc. 32, p. 105. Borneo, Sarawak, Matang, (Haviland Cm. Mi) Ridley. On rocks.

This plant of which I had only seen dried specimens from Dr. Haviland's collection, I found also myself in rocks on the mountain Matang and flowered them in the Botanic Gardens Singapore. It is quite distinct from *C. parvula* the flowers being only half as large. In some specimens there is more than one outer cup shaped bract, each bract containing several flowers, and each flower being partially enclosed in another green bracteole of somewhat similar shape.

Gastrochilus parvus, n. sp.

A small tufted plant with bright green lanceolate leaves 4 inches long and 1 inch wide with rather darker nerves. Flower spike central with numerous brown lanceolate bracts. Calyx lobes rather long lanceolate pubescent white. Corolla tube $\frac{3}{4}$ inch long slender white dilated upwards and tinted pink lobes oblong white $\frac{1}{4}$ inch long. Staminodes linear oblong rounded white. Lip longer obovate oblong tip rounded white entire with a central yellow bar pink on each side. Anther thick oblong white back pubescent, with a fleshy white almost obovate crest.

Sarawak Bidi, flowered in the Botanic Gardens, June, 1904.

This little species is allied to *G. Hallieri* Ridl. *Kæmpferia anomala* Hallier Bull. Herb. Boiss VI pl. 9, 3, but it differs from that species in its entire lip, pubescent stamen and the distinct fleshy crest.

G. reticosa, n. sp.

Stem creeping short, throwing up branches, each bearing a single leaf and an inflorescence. Leaf petiole slender 3 inches long, grooved above, blade ovate subcoriaceous base cordate apex acute with about 10 pairs of raised veins and close conspicuous reticulations, 3 inches long 2 inches across, bright green, beneath paler pubescent spike shorter than the petiole $1\frac{1}{2}$ inch long outer sheaths enclosing the base of the leaf, innerbracts lanceolate acute. Flowers small opening singly. Petals linear lanceolate $\frac{3}{16}$ inch long yellow. Lip rounded spathulate base narrow limb $\frac{1}{4}$ inch wide rounded bilobed, base white with a yellow bar running to the limb which is pale violet. Staminodes half as long as the petals reflexed linear oblong obtuse, yellow minutely pubescent.

Stamen white pubescent filament short. Anther oblong retuse, not crested.

Sarawak, Bidi (H. N. Ridley), Fl. H. B. S., Nov. 22, 1904.

Near *G. Hallieri*, Ridl. This little plant is very distinct in its rigid pretty reticulated foliage.

G. plicata, n. sp.

A large plant for the genus. Stems tufted. Leaves distichous sheaths split 3 inches long with a broad thin margin. Petiole 4 to 5 inches long stout. Blade ovate acute 12 inches long 6 inches wide light green above beneath paler, plicate. Spike shorter than the petiole, covered with subdistichous sheaths bearing a small green ovate blade at the top. Flowers opening singly. Corolla tube 1 inch long white lobes narrow linear acute ½ inch long. Staminodes subspathulate obtuse rounded 1 inch long ½ inch wide light yellow. Lip 1 inch long oblong obtuse with up curved sides tip rounded entire, yellow with a cherry red band at the base and a similarly colored blotch at the tip or a broad band the whole length of the lip. Stamen shorter, white. Anther oblong with no distinct crest, tip rounded, entire. Stigma clubbed.

Kelantan, Kwala Lebir. (Dr. Gimlette). The plant sent by Dr. Gimlette flowered in November 1904. It is evidently near a plant I found at the foot of Gunong Pantai in Johore formerly and may possibly be identical, but I never saw flowers of that species nor was able to grow it. The plant is allied to *G. pandurata*.

Alpinia Murdochii, n. sp.

Stems five feet tall. Leaves elliptic lanceolate acuminate base broad 7 inches long 2 inches wide very closely ribbed pubescent above, paler and closely pubescent beneath, keel prominent, petiole very short hairy, ligule oblong truncate hairy, sheath pubescent, hairy along the edge. Raceme terminal four inches long, rachis and pedicels golden hairy, pedicels ½ inch long. Bracteole broad ovate half an inch long, glabrous within, hairy outside. Calyx white half an inch long tubular, lobes short ovate, pubescent, hairy at the base. Corolla short twice as long as the calyx tube very short, much shorter than the calyx white, upper sepal oblong hooded with a thick blunt boss on the top, the other two narrower oblong obtuse, all white finely dotted red. Lip shorter obovate three lobed, side lobes broad truncate, margins undulate, midlobe narrow, blunt bifid white base of lobes thickly dotted with red, and five elevated violet purple towards the tip. Filament broadly linear short. Anther as long thick, emarginate at tip and crestless yellow spotted red on the back. Style filiform. Stigma cup shaped, staminodes very short and obscure.

Selangor, Semankok Pass, Feb. 1904. (A. M. Burnmurdoch), Sempang Mines (Ridley).

This species is remarkable for the shortness of its lip which is little longer than the stamen.

BURMANNIACEÆ.

Thismia arachnites, n. sp.

Succulent saprophyte, Stem 1-3 inches long creeping. Flowers 2-3 bracts lanceolate acute $\frac{1}{4}$ inch long. Peduncle in flower nearly half an inch long. Bracteoles shorter than bracts but similar. Perianth tube urn shaped, narrowed at the base $\frac{3}{4}$ inch long, $\frac{3}{8}$ inch wide, semi-transparent with numerous vertical ribs and numerous alternate transverse bars, conspicuous during life, all whitish with 6 red vertical streaks in the upper part, ring distinct and from round the mouth yellow. Calyx lobes short, rounded earlike, petals developed into long slender white tails $1\frac{1}{2}$ inch long. Stamens deflexed rising close to the mouth, oblong $\frac{1}{4}$ inch long, with an oval perforation close to the base, and numerous short teeth at the tip. Anthers very small style, short, thick, 3 lobed. Capsule cupshaped $\frac{1}{4}$ inch long and as wide, edges thickened. Peduncle thickened, fleshy.

Perak in dense forest just above the tea gardens Larut Hills, February, 1904.

AROIDEÆ.

Raphiedophora falcata, n. sp.

Stem woody $\frac{1}{3}$ inch through. Leaves coriaceous lanceolate falcate acute base cuneate or hardly narrowed inaequilateral 8-9 inches long 1 inch wide, midrib prominent, nerves fine very numerous but not very prominent indistinguishable into primary and secondary nerves, transverse nervules not visible. Spathe green, not seen. Spadix sessile over 1 inch long thick nearly $\frac{1}{2}$ inch. Pistils oblong, top rounded not hexagonal. Stigma circular in an elevated ring, "yellow." "Ovary 1 celled with 2 imperfect partitions, ovules numerous."

Siam Bangtaphan (Dr. Keith), climbing up trunks of trees.

I have also leaves of what appears to be this from the Malay peninsula (Cantley's) collection, labelled "Jarnom Antan" and said to be used as an anthelmintic in children, the root being rubbed up in water and applied to the head, but I have never met with it in the Malay Peninsula myself.

Curculigo racemosa, n. sp.

Leaves lanceolate acuminate with a long point plicate, bright green, glabrous, above 18 inches long 3 inches wide, with small scattered hairs at the back, petiole 4 inches long hairy. Raceme erect 4-5 inches long, base $1\frac{1}{2}$ inch wide, hairy with brown wool. Flowers distant spreading, reflexed after flowering about 16. Bract base oblong above long acuminate $\frac{1}{2}$ inch long pale green edged with brown, hairs. Pedicel and ovary a little shorter brown hairy. Petals and sepals similar, oblong, linear, blunt, $\frac{1}{4}$ inch long, sepals slightly broader, bright yellow above, brown, hair, on the keel and tip beneath. Stamens shorter, filaments linear, abruptly bent in the middle sigmoidly then ascending. Anthers orange linear, cells divaricate at base. Style very short half as long as the filaments. Stigma very small capitate.

Borneo, Sarawak on Mt. Matang. (H. N. Ridley).

FLAGELLARIEÆ.

Joinvillea malayana, n. sp.

A tall reed-like plant with numerous stems in a tuft about 6 to 8 feet tall, $\frac{1}{4}$ inch through hollow and leafy. Leaves very stiff plicate linear acuminate, narrowed at the base, bright green, glabrous 18 to 24 inches long 2 inches wide, sheaths smooth. Panicle terminal spreading 8 inches long with sinuous hairy branches. Flowers $\frac{1}{8}$ inch long, sessile or nearly so. Sepals 3 ovate keeled subacute with a small point ciliate at the tip. Petals 3 as long oblong truncate ciliate. Stamens 6, (one abortive). Anthers linear oblong, bases emarginate, filaments about half as long, ovary conic with a stout style, 3 shorter plumose stigmas. Fruit a very small globose red berry succulent, 3 seeded, seeds round.

Perak, Thaiping Hills, at the Cottage. Abundant in dry soil.

Selangor, Semangkok Pass. This also occurs on Mt. Matang in Sarawak where it was collected by Mr. Bartlett.

This remarkable plant belongs to the small order *Flagellarieæ*, and is closely allied to *Flagellaria* a common sea shore climbing plant known as Rotan Binni here. Three other species of the genus are described, two from the Sandwich islands and one from New Caledonia so that the discovery of a fourth from the Malay Peninsula is of no little interest. The plant itself might easily be taken for a grass with its reed-like hollow stems and plicate leaves, like those of *Panicum plicatum* but much stiffer and the panicle of small flowers is not at all unlike that of a grass till their structure is examined. Curiously the Malayan species is more nearly allied to one of the

Hawaian species than to the New Caledonia one. I cannot recall any parallel case of such a distribution of any genus in our flora, unless one compares it with the large genus *Cyrtandra* in *Gesneraceæ* which attains its maximum of developement in the Sandwich islands and spreads through the Malay islands as far as to the peninsula where it dies out towards the North.

I am indebted to Mr. A. B. Rendle of the British Museum for aid in identifying this very curious plant.

PALMÆ.

C. Lindeni, Hort.

This rattan from the Philippines is only known from its foliage as a pot plant, in cultivation. A full grown female plant has flowered several times in the Botanic Gardens Singapore, so I herewith describe it. The plant itself so exactly resembles *C. lobbianus* Becc. of Singapore that it is impossible to distinguish it when out of flower. The stem is about 12 feet long densely covered with the sheaths which are densely bristly brown. The rattan has joints 3 inches long 1 inch through ; the flagella about 10 feet long covered with half circles of black tipped hooks except on the very slender narrow sheaths about 3 or 4 on each flagellum. The leaf is about 3 feet long, petiole 6 inches and $\frac{3}{8}$ inch wide flat above and covered with brown scurf armed with short sharp thorns along the edge, and longer needle like ones at the base. Leaflets very numerous and close alternate equidistant 8 inches long $\frac{3}{4}$ inch wide linear setaceously acuminate green above white beneath with scattered black bristles above and beneath on the nerves and tip. Spadices 2 or 3 erect $3\frac{1}{2}$-4 feet tall, peduncle $\frac{3}{4}$ inch wide whitish scurfy armed with a circular thorns $\frac{3}{4}$ inch long or less along the edges. Spathes silvery scurfy 5 or 6 unarmed lower ones 9 inches long with a long irregularly torn limb 2 inches long. Branches recurved about 6 paniculate 6 inches long. Spathels scurfy tubular not dilated upwards with no limb. Spikes

1 inch or more long on branchlets 3 inches long, flowers (female) not distichous but irregularly arranged, crowded. Spathels very short green. Calyx swollen short very shortly 3 lobed corolla half as long again, lobes oblong obtuse. Staminodes represented by a thin membranous corona with short filaments. Style short and thick, arms stout.

The whole inflorescence more resembles that of a Licuala such as *L. spinosa* than that of a rattan.

Pinanga limosa, n. sp.

A small dwarf single-stemmed palm one to two feet tall with strong roots. Stem $\frac{1}{4}$ inch through woody distinctly ringed internodes 1 inch long. Leaves a foot long 6 inches wide pale green, sheaths broad, petiole 3 inches long, blade entire obcuneate deeply bifid at the top or more often split into about 5 lobes, lower ones acuminate or truncate with numerous short teeth, nerves numerous conspicuous. Spathe not seen, spadix deflexed simple or with 3 branches slender 2 inches long. Flowers distichous alternate about 28. Calyx lobes (female) short broad orbicular. Fruit small $\frac{1}{4}$ inch long, drying subacute, white oblong.

Singapore, Selitar; Johore on Sungei Tebrau.

This little palm inhabits wet sloppy forest swamps along river banks. It is allied to *P. disticha* Bl. but the stems are solitary and it does not branch, the leaves light green and often cleft, the spadix often 3 branched and the fruit smaller and blunter.

P. riparia, n. sp.

Stems several distant 12 to 13 feet tall $\frac{1}{2}$ to $1\frac{1}{2}$ inch through, internodes 3-4 inches long. Leaf about 3 feet long, rachis angled scurfy, blade pinnate with 3 lateral lobes and one terminal bilobed one, lobes linear or linear lanceolate acuminate with 3 to 6 nerves 3 to 9 inches long, $1\frac{1}{4}$ to 2 inches across tip entire long acuminate, terminal lobes broad coarsely toothed many nerved.

Spadix decurved, peduncle stout $\frac{3}{4}$ inch long, branches 3 to 4 stout 6 or 7 inches long, flowers close distichous. Females globose $\frac{1}{8}$ inch long. Sepals orbicular ribbed, petiole barely longer. Fruit $\frac{1}{4}$ inch long oblong obtuse, top ringed. Stigmas very short capitate.

Johor, swampy forest on the banks of the Sungei Tebrau near Castlewood.

This palm is allied to *P. coronata* Bl. but has a very much smaller spadix. It grows in very wet mud close to the river banks.

P. acanlis, n. sp.

Stem very short hardly 4 inches long covered with the fibrous sheaths of the leaf bases, solitary. Leaves few, petiole obscurely angled 22 inches long, blade entire cuneate tip bifid toothed 15 inches long 6 inches wide, nerves 13 pairs, base unequally narrowed, terminal lobes 4 inches long with 4 to 6 acuminate teeth; or pinnate with three pairs of linear oblong acuminate lobes not toothed, 4 nerved 8 inches long rather distant opposite, lowest pair $1\frac{1}{2}$ upper 3 inches wide terminal pair cennate. All light green glaucescent at the back. Spathes sessile oblong 2 oblong acute boat-shaped strongly keeled brown erect $1\frac{1}{2}$ inch long $\frac{3}{4}$ inch wide. Spadix 2 inches long densely covered with male flowers, at first quite concealing the females. Males white $\frac{1}{4}$ inch long calyx very short 3 lobed lobes acute; petals subsymmetric ovate triangular acute. Stamens 8 or 12 shorter than the petals, filaments short conical rachis crimson. Female flowers small opposite, petals and sepals orbicular rose pink. Stigma irregularly oblong capitate white. Rachis in front lengthening to 6 inches. Fruit cylindric narrow $\frac{3}{4}$ inch long.

Perak, Kamuning Woods, Sungei Siput (Machado).

This most curious dwarf palm was discovered in abundance by Mr. Machado in the woods at Kamuning where he has already discovered so many other remarkable plants. It is unique in Pinangas in its exceedingly short stem covered by the old leaf sheaths from which arises a short thick double spathe which just protrudes above the sheaths. When it opens, the short stout spadix is densely covered with ivory white male flowers, which fall off next day, and the bright crimson rachis bearing small pink female flowers is seen. The rachis then elongates remaining pink and bearing its small cylindric fruit. A number of live plants have been sent by the discoverer to the Botanic Gardens Singapore, where it seems likely to do well.

Licuala lanuginosa, n. sp.

Leaf with a stout bluntly 3 angled petiole over a foot long $\frac{1}{4}$ inch through, thorny for about half its length, thorns conic short brown, blade 6 lobed, lobes linear stiff with short broad teeth 13 inches long one inch wide, with 3 or more ribs on each. Inflorescence a foot long thick covered with silvery wool, branches 2 or three with a short thick peduncle, spikes stout 2 inches long thick woolly spathes silvery lacerate. Flowers numerous sessile $\frac{1}{8}$ inch long globose. Calyx broadly cylindric shortly 6 lobed covered with dense shinning hair. Petals little longer ovate lanceolate silky. Staminal cup 6-lobed.

Johor, on Gunong Pulai, and Gunong Panti (Ridley).

This species is allied to *L. kiingana* Becc., but the flowers are larger.

Borassus Machadonis, n. sp.

Stem as tall and nearly as thick as a cocoanut palm, ringed with the remains of the fallen leaves. Leaf stalk 12 to 15 feet long $1\frac{1}{2}$ inch thick unarmed deeply channelled green, blade suborbicular 4 feet across about 6 feet long split nearly to the base into sharp edged linear acuminate lobes. Male inflorescence of three cylindrical catkins 14 inches long $1\frac{1}{4}$ inch thick. Bracts oblong with an ovate obtuse limb. Calyx 3 lobed, $\frac{1}{4}$ inch long, as long as the bract, lobes oblong unequal, one with a broad rounded top, the others acute, split about half way down. Corolla with three linear narrow lobes edges rounded fringed, ⅜ inch long. Stamens filaments short, anthers long linear narrow acute. Female spadix 12 in. long with a broad flattened orange peduncle 3 inches long. Flowers about 20, crowded, terminal portion of spadix barren, about 2 inches long. Bracts 2 broadly semicircular 1 inch long and as wide, (in young fruit) edges lacerate, orange brown outside, yellowish white within stigmas. Young fruit obovoid dark green with 3-4 white lines corresponding to cells sepals obovate orange 2 inches long paler at base. Petals longer rounded truncate. Seeds 3 oblong woody, outer face convex inner face obscurely 3 angled, 3 inches long 1 inch through covered with rough brown hair.

Perak in dense forest at Kamuning near Sungei Siput, (Machado). Native name "Chang-hai."

The genus *Borassus* has hitherto been considered to consist of a single species *Borassus flabelliformis* L. This species including *B. æthiopum* Mart. is a native of Africa and probably India. A sacred tree of the Hindus it has been carried all over the east, and more or less established itself chiefly in sandy places near the sea, or in temple grounds. It does not thrive in damp spots nor does forest country suit it at all. It is evidently a desert plant by nature. This plant is known as Lontar by the Malays. Lon being an old name for Pohon "tree," and Tah being the Hindu Tal, the name of the Borassus. I was therefore much surprised when Mr. Machado sent me a leaf and seeds of a *Borassus* he had found in the forests of Kamuning in some quantity. He has since sent me complete material of this remarkable palm, which proves to be quite distinct from the well-known Lontar or Palmyra palm. It differs from that species in the entirely thornless petiole, and the blade of the leaf split to the base in the three lobed calyx, and narrow petals of the male flower, and in the long narrow anthers. I can find no description of *Borassus* to agree with this. All the Indian descriptions are undoubtedly those of *B. flabelliformis*, Rumphius

Herb, Amboin. I p. 4-5. t. 10 describes and figures "Lontarus domesticus" which is certainly the same plant, and Loureiro's *B. flabelliformis* is the same. The latter author describes also a *B. tunicata* from the Decan and Guzerat, which has unarmed petioles and is referred by Wendland to *Pholidecarpus*. But the description does not fit the new Borassus and no *Pholidocarpus* is known from that region and what Loureiro intended is quite obscure.

CYPERACEÆ.

Mapania longispica, n. sp.

A large tufted plant. Leaves linear gradually acuminate 5 feet long 1 inch wide, margins with close pale thorns. Scape stout over a foot tall with a head of 4 to 8 cylindric spikes. Bracts ovate acute ribbed $\frac{3}{8}$ inch long. Spikes $1\frac{1}{4}$ inch long $\frac{1}{4}$ inch through cylindric. Bracteoles ovate obtuse ribbed down the back. Squamellæ $\frac{3}{8}$ inch long fringed. Style trifid slender, nut trigono-globose, endocarp hard black, ectocarp separable green.

Perak, Larut Hills, above the Tea Gardens (Ridley 11424) on banks in the forest.

This plant is allied to *M. kurzii* Clarke which occurs in the same district. It differs in its large cylindric spikes and stouter scape.

M. valida, n. sp.

Rhizome stout woody $\frac{3}{8}$ inch thick. Leaves numerous linear acuminate $2\frac{1}{2}$ feet long $\frac{3}{4}$ inch wide edges roughly thorny point very long and slender, bases of leaves shining dark brown. Scapes stout $4\frac{1}{2}$ inches long with numerous sheaths at the base. Heads of 3 or 4 spikes oblong conic over $\frac{1}{2}$ inch long bracts ovate ribbed $\frac{1}{4}$ inch long. Bracteoles ovate dark brown ribbed. Squamellæ linear margins ciliate. Style trifid. Nut pear-shaped with a ridge on one side pale brown very small.

Singapore Bukit Timah and Changi (Ridley 1714, 5998). In forests.

This is allied to *M. Wallichii* Clarke a common plant in our woods but has longer more slender peduncles and usually 3 or 4 spikes in a head but one of the Bukit Timah specimens has only a single spike in the head. In the flora of British India Vol. VI. p. 682. Mr. Clarke refers this to the Javanese *M. multispicata* Clarke based on *Pandanophyllum humile* Zoll. Verz. Ind. Arch. ii. 61 but in a letter received lately he states that it is a distinct species. I am indebted to him for pointing out the distinction of both of these species from any described, and for notes on them.

Mapania montana, n. sp.

Stem short and thick emitting stolons 4 inches long covered with acuminate sheaths. Leaves linear base narrowed into a distinct petiole, apex abruptly acuminate, petiole 4 inches long, blade 22 inches long 2 inches wide 3 nerved, point 2 inches long armed with short thorus. Scape 15 inches long rather slender. Bracts 3, lowest oblong ovate 1½ inch long, with an abrupt point 3 inches. Capitalum 1½ inch through of about 40 heads densely crowded ¼ long. Bracteoles oblong rounded at the tip long ribbed margins lacerate. Squamellæ narrow, edges ciliate. Style shortly trifid.

Borneo. Mt. Kinabalu, Penokok, Haviland 1801, at 3000 feet alt.

Apparently only a single specimen of this very distinct plant was obtained and it is not mentioned in Stapf's account of Dr. Haviland's plants. It has the foliage of *M. humilis* Naves, but the inflorescence resembles that of *M. palustris.*

GRAMINEÆ.

Isachne sylvestris, n. sp.

Stem ascending geniculate rather stout 9 inches tall. Leaves lanceolate acuminate with a broad base, 3 inches long ½ inch wide, margins thickened glabrous above, pubescent beneath, sheaths hairy. Panicle 6 inches long much branched, 3 inches across, branches slender subwhorled spikelets solitary $\frac{1}{10}$ inch long subglobose. Glume I ovate ciliate ribbed Gl. II ovate obtuse cuspidate with short bristles Gl. III elliptic obtuse shorter coriaceous paleate male Gl. IV similar but pubescent, female. Grain free brown.

Dindings in Woods at Telok Sera (Ridley 7265).

Ischæmum læve, n. sp.

A tall grass resembling *I. magnum* in habit, nodes glabrous. Leaves linear lanceolate acuminate from a broad base 3 inches long $\frac{1}{4}$ inch wide edge scabrid at the tip glabrous, ligule short bilobed, mouth of sheath ciliate. Spikes 2 appressed 4 inches long spikelets in pairs one sessile one shortly pedicelled $\frac{1}{4}$ inch long joints and angles of pedicels shortly white ciliate. Glume I. narrowly elliptic oblong submucronate smooth edge ciliate, II. lanceolate shorter edge ciliate III. these lanceolate ciliate paleate IV. shorter lanceolate with a short straight pale awn.

Singapore at Galang (Ridley 9143).

I do not think this can be a form merely of *I. magnum* Rendle. The first glume is narrower and not wrinkled at all.

Mnesithea pubescens, n. sp.

Stems slender three feet tall nodes ciliate leafy. Leaves linear acuminate 6-12 inches long $\frac{1}{4}$ to $\frac{1}{2}$ inch wide softly pubescent spikes slender on long slender pubescent peduncles 4 inches long solitary $1\frac{1}{2}$ inch long yellow breaking below the node so that each joint is shortly stalked, internodes short $\frac{1}{8}$ inch long dilated upwards bearded at the base. Spikelets 2 sessile with a narrow linear pedicel between longer than the internode Glume I ovate lanceolate acute, tip curved base channelled with 4 or 5 grooves above, with numerous linear perforations from each of which rises a cilium. Gl. II lanceolate acute as long. III lanceolate hyaline smaller. IV smaller hyaline.

Johor, Batu Pahat at Minyak Buku (Ridley 11017).

There are two other species only known of this curious genus *Mn. laevis* Kunth. of India and China and *Mn. geminata* Ridl. (*Rottbœllia geminata* Hack,) a native of Pahang. This species from the rocky cliffs on the Western coast of Johore differs from the other two in the pubescence of its leaves and spikes, and in the curious perforations each containing a hair on the outer glume.

Pollinia rupestris, n. sp.

A perennial grass several feet tall, stout, nodes bearded. Leaves acuminate 7 to 8 inches long, $\frac{1}{2}$ inch wide narrowed to the base glabrous above covered with scattered hairs beneath, mouth of sheath hairy, ligule short truncate. Spikes several erect appressed 4 inches long fragile stout. Spikelets callus not ciliate. Glume I ovate lanceolate boat shaped mucronate keel ciliate, margins hyaline, II similar in shape with strong bristles on the back cartilaginous ribbed reddish. III hyaline shorter oblong, palea narrower pubescent. IV short hyaline with a long twisted awn from between two linear acuminate paints.

Johor, on rocks at Batu Putih near Batu Pahat Ridley (1018).

Bambusa magica, n. sp.

Stems about 20 feet tall and half an inch or less through, branches slender tufted at the nodes, internodes 1 inch long leaves lanceolate acuminate glabrous 3 inches long $\frac{1}{2}$ inch wide, margins scabrid, the thickened base narrowed into a very short petiole sheath auricled with white cilia on the auricles. Spikelets in short panicles lanceolate pale $\frac{3}{4}$ inch long $\frac{1}{8}$ inch across, empty glume I ovate lanceolate. Flowering glumes 7 lanceolate mucronulate keeled, margins ciliate, palea shorter lanceolate bifid tips ciliate, lodicules 3 lanceolate ciliate.

Perak Gunong Berumbun (Wray 1560) "Bulu Perindu."

This plant is referred to the Chinese Hedge Bamboo (*B. nana* Roxb) by Gamble Ann. Gard. Calc. VII. 41. But it is very improbable that Wray's plant could have been introduced on Berumbun and the adjacent hills and it differs from *B. nana* in its taller stem, quite glabrous leaves and less strongly ribbed glumes ciliate at the edges. Wray writes of it (Journn. Roy. As Soc. S. br. vol. 21. p. 139· "The small bamboo called by the Malays "Bulu Perindu" is extremely plentiful on Berumbun and comparatively scarce on the other hill. I was fortunate in being able to collect flowering specimens of this elegant little bamboo which is credited with mystic properties by the natives and is, much in request by love-lorn swains whose mistresses are cold and irresponsive."

B. elegans, n. sp.

A tufted bamboo with stems 15 to 20 feet tall, and $\frac{1}{4}$ inch through green and red like, nodes elevated, internodes over a foot long. Culmsheaths narrow acuminate a foot long $1\frac{1}{2}$ inch across, ligule ciliate with the cilia in tufts, limb extremely narrow' linear acuminate slightly scabris $1\frac{1}{2}$ inch long $\frac{1}{16}$ inch across. Leaf and flowering branches whorled with numerous sheaths at the base. Leaves lanceolate acuminate 2-6 inches long $\frac{1}{2}$ inch wide finely ribbed and minutely pubescent on the back base rounded with a very short petiole, ligule short ciliate. Spikes numerous subremote not whorled or crowdep. Bracts oblong dry and pale, outer one $\frac{3}{8}$ inch long, inner ones smaller more ovate mucronulate, spikelets $\frac{1}{2}$ inch long. Basal one of three empty glumes. Second flower $\frac{1}{4}$ inch long. Glumes I and II lanceolate green tipped with purple edges ciliate palea not keeled edges ciliate enclosing a conical cylindric pistil with 2 short stigmas. Lodicules none. III. Flower male, glumes and palea as in II. Stamens 6, anthers with two points at the tip. Flowers IV and V abortive. Rachilla flattened dilated upwards ciliate. Fruit not seen.

Selangor. On the Ulu Semangko hill, (Buru-Murdach. Ridley).

This elegant tufted bamboo is abundant at the top of the big hill above the Semangko pass. As nearly all the flowers both in Mr. Burn-Murdoch's original specimens and the ones got afterwards by me have nearly all the flowers destroyed by insects I have had some difficulty in making out the structure and am not very certain as to which genus this bamboo should be referred to, but I think it should be referred to *Bambusa*. The stems are tall and slender, half scandent among the low trees of the hill top.

Dinochloa montana, n. sp.

Culms long and scrambling slender smooth with whorled branches. Leaves lanceolate acuminate 8 inches long, one inch wide glabrous, tips scabrid bases unequal slightly alternate into a short petiole $\frac{1}{8}$ inch long, sheaths smooth flattened striate with a low callus minutely pubescent, not ciliate. Panicle long, rachus very pubescent with distant heads of spikelets $\frac{1}{2}$-$2\frac{1}{2}$ inches apart spikelets $\frac{1}{8}$ to $\frac{1}{4}$ inch long, straw colored one flowered. Empty glumes 4 ovate obtuse strongly keeled and mucronate rachilla stout flexuous. Flowering glume lanceolate, ribbed minutely mucronate. Palea oblong with two nerves not keeled nor ciliate. Lodicules 6 spathulate oblong strongly nerved edges ciliate. Grain oblong beaked narrowed at the base channelled along one side, beak minutely hairy.

Penang Hill forming dense masses at an altitude of 3000 feet, in forest (Ridley 7064, 7265, 10171).

This slender climbing bamboo differs from *D. Tjankorreh* in its larger spikelets with 4 empty glumes, and lanceolate flowering glume, and the presence of 6 lodicules.

Dendrocalamus pendulus, n. sp.

Culms about 60 feet tall arched, 3 inches through, with long slender pendulous branches dark green below glaucescent above, walls rather thick, internodes 9 inches long nodes rough with short projecting rootlets at the base. Culmsheaths 6 to 9 inches long hard, covered at first with white woolly appressed hairs in fascicles, limb narrow lanceolate acute 4 inches or more long caducous. Auricles large dark red with long white cilia. Leaves lanceolate oblong acuminate thin glabrous 5-6 inches long $\frac{3}{4}$ to inch wide, base broad truncate, edges scabrid at the tip, petiole short thick $\frac{1}{16}$ inch long sheaths minutely pubescent, top truncate ligule very short, with few or no cilia at the mouth. Panicle of simple spikes of heads on the ends of the leafy branches with occasionally one or more branchlets. Heads of spikes crowded $\frac{1}{2}$ inch long, with broad sheaths yellow with a short limb at the base. Spikelets $\frac{1}{6}$ inch long glabrous shining oblong cylindric numerous 1 flowered. Empty glumes ovate glabrous 2. Flowering glumes longer lanceolate. Palea as long 2 nerved not keeled convolute, lanceolate. Lodicules none. Stamens 6, anthers oblong minutely apiculate filaments narrow linear free. Ovary conic short hairy, style simple hairy.

Selangor Pahang Track (Ridley 8482) alt. 2000 feet.

This superb bamboo with its long arching culms and long pendulous branchlets has long been cultivated in Singapore Botanic Gardens, but has not flowered there. The flowers are described from a plant in high forest in Selangor, quite resembling that cultivated in the Singapore Gardens. The young culm sheaths are covered with fine white hair, as if coated with mildew. This disappears in the full grown sheaths altogether.

On a Second Collection of Coins from Malacca.

BY R. HANITSCH, PH. D.

With one Plate.

In a former number of this Journal* I described a collection of coins which in the year 1900 had been obtained during excavations near the mouth of the Malacca river, and which had been collected together by the Hon'ble W. Egerton, Resident Councillor of Malacca, and presented by him to the Raffles Museum. The most interesting of these, previously not described, were certain Portuguese tin coins from the time of King Emmanuel (1495-1521) and John III (1521-1557), the earliest of which must have been struck by Albuquerque soon after his occupation of Malacca (1511). Towards the end of last year (1904) the Hon'ble R. N. Bland, Resident Councillor of Malacca, succeeded in obtaining more coins from the same locality which he generously presented to the Raffles Museum. He tells me that the dredger brought them up imbedded in a kind of blue clay, possibly a little to the sea-ward of the place where Mr. Egerton's were found.

The most remarkable of these are six huge tin coins, struck in two varieties, giving neither the date nor the name of a ruler, but having a pattern similar to that of the coins issued by King Emmanuel and John III,, namely with the cross on the obverse and the sphere on the reverse. The one variety (see figs. 1 and 1*a*), of which there are five specimens, measures from 35 to 36 mm. in diameter, 6 mm. in thickness and weighs from 37 to 41·5 grammes. On the obverse, around the cross, is the inscription NOSTRE SPES VNICA CRVX XPI. The mistake in NOSTRE is very extraordinary, but such errors are not uncommon on old Portuguese coins. The last three letters XPI, if taken as Latin characters, would be difficult of interpretation. Taken as Greek they would stand for Christ, although they are then more usually written in the form of a monogram ☧. For this interpretation I am indebted to Mr. Robert Sewell, *M. R. A. S.*, who in January last passed through Singapore and kindly examined the coin.

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* "On a Collection of Coins from Malacca." Journal, Straits Branch, R. Asiatic Society, No. 39, June 1903, pp. 183 to 201, 2 plates.

The inscription on the reverse is more difficult to read, the last few letters especially being much worn on all five coins. The letters seem to be SMPRDEPV SORDIEM. The first four characters I take for an abbreviation for 'semper.' The next seven letters may stand for 'Depulsor,' the letter 'l' being omitted or being covered by part of the device, viz. the projecting axis of the globe. The word 'Depulsor' occurs in a few Latin inscriptions, as an epithet of Jupiter, the averter of evil. The last four or five letters are very indistinct. 'Diem' would hardly give any sense, and I am inclined to think that the inscription should read something like 'Semper Depulsor Deus'.

The other variety (see figs. 2 and 2*a*) of which there is only one specimen, is of an unusual shape, the diameter of the obverse being 37 mm., but that of the reverse 35 mm. only, giving to the coin the shape of a truncated cone, and this appearance is heightened by the sharp edges of the coin. Its thickness is 6·5 mm. and its weight 45 grammes. The coin further differs from the first variety by the shape of the cross, the outlines of its arms being not parallel to each other, but converging towards the centre, and by the sphere on the reverse being somewhat smaller. The inscription, however, is the same on the two varieties.

Very similar to these is a much smaller coin (see figs. 3, 3*a*, 4 and 4*a*), also of tin, 24 mm. in diameter, 1·5 mm. in thickness and 4·1 grammes in weight. It again shows the usual devices of the cross and the sphere. The reverse bears no inscription, whilst the obverse has the words NOSTRAE SPES VNICA, resembling thus the above described large coins by another, almost incredible, mistake. The word 'crux' is omitted, but may be understood from the figure of the cross in the middle of the inscription. There were three specimens of this coin.

The other Portuguese coins collected by Mr. Bland are identical with those described in my former paper. I therefore merely give the number of the specimens found with their references:

Eight coins from the reign of King Emmanuel (1495-1521), loc. cit. p. 194 pl. I, figs. 2 and 2 a.

Eight coins from the reign of King John III (1521-1557), loc. cit. pl. II, figs. 8 and 8 a.

Five coins from the same reign, loc. cit. pl. II, figs. 9 and 9 a.

Seven coins from the same reign, loc. cit. pl. II, figs. 10 and 10 a.

Three coins without incription, loc. cit. pl. I, figs. 3 and 3 a.

One coin, with the letters B. A. and three crossed arrows between them, loc. cit. pl. II, figs 12 and 12 a.

In addition to these there are about twenty-five Malay coins, most of them, however, too much worn to be deciphered. One of them bears the inscription ملك العادل and is almost indentical with the one described in my former paper (p. 185, pl. I, fig. 5). The Rev. Dr. Luering has kindly pointed out to me that the reading I gave at the time of this inscription, viz. "maliku 'l-'âdil" and the translation 'The just king,' were based on a wrong vocalisation of the first word which is not to be read 'malik,' i. e. 'king', but 'milk' or 'mulk,' that is 'possession,' 'property,' and is often used with regard to coinage in the sense of the French 'fonds.' He further says that the word 'âdil' which originally means 'just,' 'righteous,' has in this connection the secondary meaning of 'equal weight,' 'full weight,' so that the inscription might be translated 'full weight currency,' or 'legal tender.'

I wish to point out that the figures of the accompanying plate are faithful reproductions of the originals, in natural size, and that their indistinctness is not due to the photographer and printer, but to the condition in which the coins were found. Only by examining the coins in different lights was it possible to decipher their inscriptions.

Explanation of the Plate:

Fig. 1.	Obverse	See page 213
Fig. 1 A.	Reverse of the same	,, ,, 214
Fig. 2.	Obverse	,, ,, ,,
Fig. 2 A.	Reverse of the same	,, ,, ,,
Figs. 3 and 4	Obverses	,, ,, ,,
Figs. 3 A and 4 A	Reverses of the same	,, ,, ,,

STRAITS BRANCH, ROYAL ASIATIC SOCIETY.

JOURNAL 44, PLATE I.

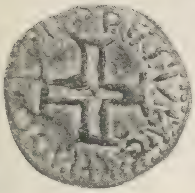


Fig. 3

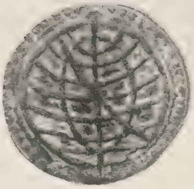


Fig. 3.A.

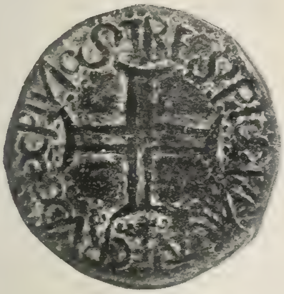


Fig. 1.

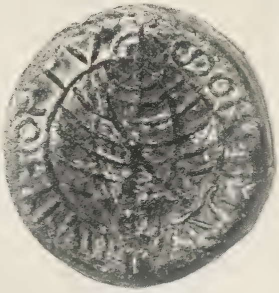


Fig. 1.A.

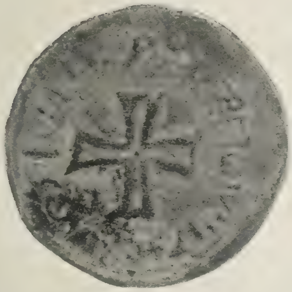


Fig. 2.

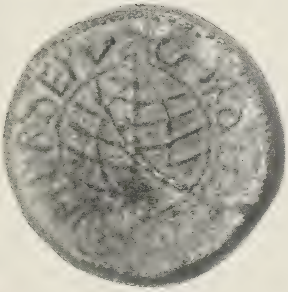


Fig. 2.A.

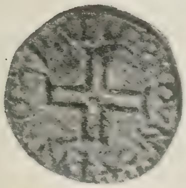


Fig. 4.

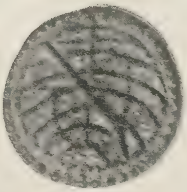


Fig. 4.A.

R. HANITSCH.

Tin Coins from Malacca.

Lightning Conductors.

G. E. V. THOMAS, A. M. INST. E. E.

Notes on Material and Method of Erecting in the Straits Settlements.

1. The number of many-branched terminals and massive rods and cables of pure copper which adorn most of the buildings, indicate that the importance of attempting to safeguard against the effect of lightning discharges is generally appreciated. A study of the attempts too frequently reveals a considerable lack of knowledge of modern methods.

2. Numerous cases which have come under the writer's observation are applications of a theory, which obtained general credence twenty or thirty years ago, that a conductor "protected" a defined area bearing some direct relation to its height. A "law" to this effect was actually laid down and found many adherents ——possibly because of its simplicity.

3. In other cases a quite disproportionate amount of attention is paid to the earth connection, sometimes at the expense of the material and work above ground. Tests which show a resistance of more than an ohm or two, though made, frequently, during dry weather, are often considered sufficient to condemn a conductor satisfactory in other respects.

4. The writer has been called upon to inspect a large number of conductors upon Government and Municipal buildings during the past few years, and is forced to the conclusion that, in a large majority of instances, much greater protection could be provided for a smaller initial outlay.

5. To illustrate this the case of a certain powder magazine in the Colony may be cited. As is usual for buildings of this sort, very considerable care had been exercised by the Authorities in the provision of elaborate conductors-and a very considerable sum expended upon material and work. Broad strip of pure copper is the material used and this is run along the main

Jour. S. B. R. A. Soc., No. 44, 1905.

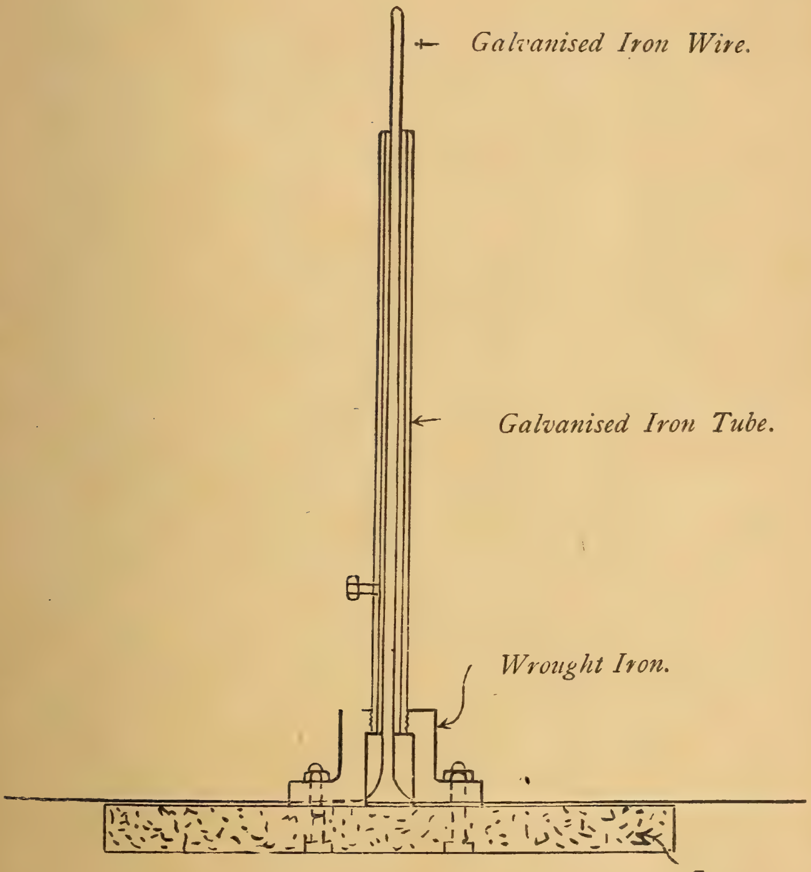
ridge of roof and connected to eight points from which similar strip is taken down to eight earth connections. As the brief suggestions which follow may serve to indicate, seven of these "earths" are quite unnecessary and, further, had an equivalent weight of copper been used in the form of a light stranded wire, very much better protection would be afforded.

6. The determination of the size and section of the conductor, whether of copper or iron, depends more upon mechanical strength and durability than conductive properties. There is little danger of the wires becoming melted and, if the system is inter-connected, the fusion of certain lengths would not affect the utility of the conductor as a whole to any serious extent. The network advocated by the writer would deal with succeeding discharges whereas a break in a single conductor has frequently been the cause of damage. Fusion of part of the network would not escape notice and, in a sense, would be satisfatory in affording proof that the conductor had seen active service.

7. The material used by the writer is galvanised iron in the form of a light cable composed of seven strands of number sixteen gauge wire. (7/18) This affords ample mechanical strength, is pliable and unobtrusive in appearance. Zinc saddles are used to secure it to ridges of roof and down walls to earth. It is frequently possible to make use of the down pipes from roof gutters by running the conductor through them.

8. In order to make the system as far as possible jointless as regards the work on the roof, which usually escapes supervision, the writer has recently designed a tubular point through which the conductor itself is drawn, doubled, and allowed to project an inch or so from the top. A set-screw at the base provides sufficient contact without the necessity of soldering—often so awkward an operation on a roof that it is left undone altogether. The point is practically formed of the conductor itself and joints become unnecessary above ground.

9. The number of points and the amount of wire used for any building must depend upon the degree of safety desired and the funds available for providing it. The fact that many points and much wire mean better protection should be thoroughly recognised. In practice something must be sacrificed to


Galvanised Iron Wire.
Galvanised Iron Tube.
Wrought Iron.
Cement.

SECTION.

R. A. Soc., No. 44, 1905.

appearance in the case of ordinary buildings and the multiplication of points, even of the short pattern now advocated, cannot be carried to excess. Prominent ridges should be provided with one for every fifteen or twenty feet of length ; every corner should also have its point and all should be connected together and to the "earth."

10. This connecting up of points results in a net-work over the whole roof which forms the nearest feasible approach to the continuous metallic screen held by modern views to constitute an absolute safeguard.

11. As suggested in paragraph 7 the down pipes from rain guttering may frequently be used for bringing down the wires from roof net-work to earth. The connection to roof net-work should be made by inserting the wire into a corner point, where it will meet two net-work wires. Soldered joints will still be unnecessary as the wires will be in close contact throughout the length of the point.

12. The question of earth connection has next to be considered. This is usually held to be of primary importance and various rules are laid down which state the exact maximum resistance permissible. It is, no doubt, desirable that the resistance should be reasonably low so that disturbance may be avoided, but whether it be of two ohms or fifty matters very little. The effect of a poor earth connection was recently demonstrated at the Civil Prisons in Singapore, where a discharge taken by the conductor blew out the soil over the earth connection, leaving a hole about three feet in diameter and two deep. This earth was formed of the coiled end of the conductor—a heavy galvanised iron cable—and was buried to a depth of a couple of feet only, on a slope. Moist soil would have been reached by taking it a little further away to lower ground and burying it a little deeper, but, on enquiry, the writer found that the workman responsible had miscalculated the length required, cut the cable and hurriedly buried the end. The instance serves to show that no great harm results from imperfect earth connections if they are placed sufficiently far from foundations.

13. It is rarely a matter of great difficulty or expense—especially where galvanised iron is the material used—to continue the conductor to permanently damp earth. If it is laid

in a strench twelve or fifteen inches deep, and taken to a point not less than one hundred feet from the building where damp soil may be reached without an excessive amount of excavation, the earth connection may be said to be perfect. By taking the conductor this distance from the building not only is the risk of damage due to disturbance near foundations averted, but an increased area of earth connection is obtained.

14. Except in the case of very small buildings it is advisable to have at least two connections between the roof net-work and the earth. In extensive buildings the writer has made a practice of bringing down six or more. In these cases it is occasionally necessary, from motives of economy, to join the down wires together and continue one only away to the "earth" There is no difficulty in making thoroughly good, soldered joints in galvanised cable on terra firma, but, if funds allow, it is a much better plan to have a continuous trench round the building into which all the down wires are taken and then continued, laid up together, away to the deep "earth."

15. As regards the comparative cost, it is interesting to note that, for the same outlay not less than twenty-five times as much surface can be covered by the stranded galvanised wire suggested as would be by a single copper rod of one inch in diameter, such as is frequently used. In fact it is perfectly safe to state that, taking into consideration the increased amount of labour, and additional details and accessories, required for net-work system, quite twenty times better protection may be obtained for the same outlay.

16. Many interesting illustrations of the inefficacy of single conductors for complete protection may be quoted from local records. In one instance, which came under the direct observation of the writer, some damage was done to the part of the roof of an extensive range of buildings on which three independent conductors were fitted. Such cases afford sufficient proof that single conductors do not effect their purpose in taking discharges quietly away; on the other hand there can only be negative evidence that buildings protected on the net-work system, with many points, are not liable to be damaged.

17. The writer trusts that these notes will be of service and would conclude by making the following suggestions:—

a. Use as many points as possible (paragraph 9)—three short points placed ten feet apart on a roof ridge are much better than one elaborate and expensive three-pointed terminal.

b. Use galvanised wire of small section and interconnect all points on the roof. The lighter the gauge of wire used the greater the area of roof covered for the same outlay. (paragraph 7).

c. Avoid sharp bends and turns in the wire. Side flashes are apt to jump off from an abrupt bend or kink, which may cause damage to the adjacent masonry.

d. Connect in the roof gutters. Actual jointing is unnecessary and it will usually be found convenient to have the wire from corner points laid along the guttering and thence through down pipes to earth.

e. Take the earth connection away to a deep "earth" even if it is necessary to go a considerable distance from the building, The additional area of "surface" earth is useful, and the cost of wire and extra trenching is small.

f. Avoid joints as much as possible. Joints between the ordinary points and the wire forming the conductor are frequently made disgracefully, and, in numerous instances, the writer has found an actual break in continuity. The difficulty of supervising explains this—in fact the work is often left entirely to native workmen—and the remedy which suggests itself is that of adopting some practically jointless system.

Penang, *September 10th, 1904.*

Short Notes.

Note on the occurrence in Selangor of three Vertebrates new to the Malay Peninsula.

Among zoologists at home one constantly hears the remark that our knowledge of the vertebrate fauna of the Malay Peninsula must now be very nearly complete and that but few more species can remain to be added to our lists.

How wide this is of the true state of affairs is shewn by the fact that within the last month, the Dyak Collector attached to the Selangor Museum, has discovered two striking forms which although previously known from Borneo have not hitherto been recorded from the mainland of Asia.

The species are :—

1. *Draco maximus*, Blgr.

This fine species of flying lizard, the largest of the genus, was originally described by Mr. Boulenger (P. Z. S. 1893, p. 522, pl. xlii. fig. 1) from a single male specimen collected by Mr. Hose on Mt. Dulit, Sarawak at a height of 2000 feet. Specimens from the same locality and also from Mts. Matang and Penrissen are in the Sarawak Museum and there is a single female in this Museum, collected at Balingean, some distance up the Sarawak River.

Two individuals, male and female, were captured in deep jungle about nine miles from Kuala Lumpor and agree well with the original diagnosis and with the above-mentioned specimen from Balingean. In the freshly killed lizards the general colour above was moss-green, pale yellowish beneath ; gular appendage of the male dull terracotta, the lateral folds black, streaked with white : in the female the appendage was very pale lemon yellow, which rapidly faded into white Total length of both specimens about 370 mm.

2. *Chrgsophlegma mystacale*, Salvad.

Among some miscellaneous bird-skins in the Museum I recently discovered a woodpecker collected by Dr. Duncker on the Semangko Pass, where the trunk road to Pahang crosses the main range at a height of 2700 feet. The specimen was shot on the 29th May 1901 and is sexed female, though this is probably an error of the native skinner. It appears to belong to a species described by Count Salvadori as *Chrysophlegma mystacale*, from collections made in the Padang mountains, West Sumatra, by the famous Italian Botanist Beccari. Subsequently it was obtained by Carl Bock, a Swedish Collector in the employ of Lord Walden in much the same locality, and later on by Dr. H. O. Forbes at Hoodjoong, in the mountains of the Palembang Residency, further to the south. Outside this very limited district I can find no records of its occurrence, and it is somewhat unexpected to find it reappearing in the mountains of the Peninsula, which possess a distinct species (*Chrysophlegma wrayi*) of their own.

General colour above bright olive green, darker on the head and crown, the latter tinged with rufous; nuchal crest, golden yellow. Beneath, greyish olive, darker on the chest and becoming almost black on the throat; chin with a slight rufos tinge. Sides of the head dark greenish grey, malar stripe very pale yellow. Primaries black, broadly barred with rufous, the innermost crimson on their outer webs exteriorly. Tail feathers black, the outermost with an oily lustre beneath Total length :—11 inches; wing 5. 4.

3. *Ptilocercus lowii*, Gray.

PEN-TAILED TREE SHREW.

The occurrence of this small mammal is of even greater interest than that of the preceding as it adds to the Peninsular list a genus that has hitherto been supposed to be specially characteristic of the Bornean group of islands. But even in Sarawak where the species was originally discovered some fifty years ago it seems to be rare and but little appears to have been recorded of its habits.

Our specimen, an adult female, was captured in its nest in a hollow bough in the same jungle as Draco maximus. The nest was merely a tunnel about three inches in diameter and eighteen in length, roughly lined with fibrous materi and with green leaves. The general colour of the animal is a pale greyish brown above, somewhat yellowish beneath with an ill-defined dark stripe running from the muzzle to a little beyond the eye. The tail is naked for two-thirds of its length and covered with scutes like that of a rat; the terminal third is clothed with whitish hair over half an inch in length, whence the trivial name of the species is derived.

Dimensions:—Head and body, 133; tail, 167; ear 19; hind-foot, 34 mm. Examination of a series will not improbably prove that the Peninsular form is separable from the Bornean race, but distinctions based on an unique specimen are apt to be fallacious.

H. C. Robinson.

Selangor State Museum,
Kuala Lumpor.

Occasional Notes.

Pratincola manra (Pall.)

A specimen of the Indian Bush-chat was shot by Captain H. R. Baker at Stagmount, Singapore on Dec. 22, 1904. Hitherto it has been collected as far down as Mysore and the Andamans but Singapore must now be recorded as its most southerly extension. As the species is now included is the avifanna of the Malay Peninsula I give below a description of the plumage in which it was obtained locally.

Male. Forehead, crown, nape, hind neck, back, scapulars, most of the wing-coverts, and upper rump black, broadly margined with fulvous, the black predominating on the forehead and crown and the fulvous on the nape; the innermost wing-coverts pure white; primary wings coverts and winglet black edged with whitish; quills rusty black, the primaries narrowly, the other quill-broadly edged with pale rufous on the outer edge and tip; lower rump and tail-coverts white broadly tipped with orange-rufous; tail black, edged and tipped with pale rufous, broadest on the outer feathers; lores, sides of the head, chin and throal black, the feathers of the chin and throat strongly tipped with fulvous-white and a curved line of the same colour running from the nostrils over the eye; a patch of white feathers tipped with orange-rufous on each side of the neck; breast orange-rufous; remainder of the lower plumage pale rufous, palest on the centre of the abdomen and lower tail coverts; under wing-coverts and axillaries black with narrow white tips; inner edge of the wing quills whitish.

It is dark brown; bill and feet black (*Capt. H. R. Baker*). Length 130 millimetres; tail 53; wing 68; tarens 20; bill from gape 16.

C. Boden Kloss.

Nesting of the Little Grey Woodpecker.

The little grey woodpecker *Jungipicus canicapillus* is a very common bird in Singapore and may often be seen running about dead boughs in search of insects. The nest and eggs of it have however never been described. Captain H. R. Baker however espied one evidently nesting, in the dead bough of a tree (Vernonia arborea) in the Botanic Gardens at a height of about 15 feet from the ground. He first noticed it making the hole in the first week of March, and on the 24th he and I went to the tree and cut it across to get the eggs which were by them unfortunately almost ready to hatch. The eggs 2 in number were deposited at the bottom of the hole. Without any lining or attempt at a nest. They were rounded, but pointed at the small end and measured ·67 by ·54 and ·65 by ·54 respectively.

The bird must nest very frequently as it is so common and I have often seen it making holes in trees as if to nest and on one occassion, knew of one which seemed to roost regularly in a hole it had made in a dead bough. in the Gardens, where it could be seen every evening sitting in the mouth of the hole, but though it was the breeding season. I found neither eggs nor young birds in the nest.

H. N. Ridley.

Nesting of *Draco Fimbriatus.*

While walking along a jungle track in the forests at Rantan Panjang in Selangor, in August, I came across a nest of this large flying lizard. Mr. Burn-Murdoch who was walking in front called my attention to the eggs, and I found I had stepped on the female lizard which was sitting by the nest and was so much, the color of the dead leaves that I did not see it. The eggs four in number were laid in a depression apparently scooped out by the lizard in the sandy soil. They were oblong with rounded ends 15 mm. long and 8 or 9 mm. thick, quite white.

H. N. Ridley.

A Wasp attacking a Leaf-mining Caterpillar.

In December last I observed a small species of wasp, of the class that the Malays call Peningat, running about on a young mangosteen leaf which was attacked by a leaf-mining caterpillar. The upper epidermis of the leaf had been raised by the caterpillar on both sides of the midrib. The wasp about $\frac{1}{4}$ inch long, was tearing the loosened epidermis and eventually crept underneath in pursuit of the grub, which was at the further end of its burrow. It was unable apparently to get across the midrib, and after searching about for sometime came out and as it seemed accidentally in running about on the upper surface of the leaf came across the larva. It immediately tore away the loose epidernis above it and seizing its prey flew off with it. The wasp is a common species which makes small nests on the under-side of leaves. It has dark red thoraces and a black abdomen with a single yellow ring. That many of the smaller wasps prey on caterpillars is well known. The peculiarity in this case was that it attacked a leaf-miner and absolutely followed up its burrow under the epidermis.

H. N. Ridley.

On the Fertilization of Grammatophyllum.

On account of the fertilization of *Grammatophyllum speciosum* was published by myself in the Journal of the Linnean Society vol. xx p. 336, where it was shown that the black and red hornet *Vespa ciacta* was the usual agent in the transference of pollen from one flower to another The orchid flowers in August and September and I note that this year in the Botanic Gardens Singapore none of these insects are about, but the wild bee *Apis dorsalis* is at work and is an equally good fertilizer. But the insects which are most abundant on and about the flowers are small hymenoptera too small to be able to touch the pollenmasses, and ants, and also the large carpenter bees. *Xylocopa aestuans* and *X. latipes.* These visit the flowers more abundantly than the Apis, going round to each newly opened flower and plunging into it to suck the honey from the base of the lip. These insects however do not remove the pollen, although there seems at first sight no reason for their not doing so. The reason for this is that the lip of the flower is moveable on its base, and though these carpenter bees, much thicker than the Vespa, and Apis would fill up the space between the lip and column were the lip immobile and so touch with their thoraces the pollen masses, their weight on the lip bends it down so that they do not quite touch it, and thus they back out of the flower without removing the pollen. In this case the mobility of the lip is really injurious to the flower, as it allows the carpenter bees to remove the honey without fertilizing the flower, and by so doing preventing an Apis or Vespa who might come later from visiting the honey-less flower. In the wild haunts of *Grammatophylium* Xylocopas are as plentiful as Apis or Vespa and would be as good fertilizers, and it would appear that were the lip immobile the Grammatophyllum would secure the use of all three insects and avoid the loss of flowers through the removal of the honey without fertilization. The carpenter bees are thus harmful to this orchid, as it is to other flowers. By persistently tearing open the base of the corolla tube of *Ipomea palmata* to get the honey instead of pushing into the corolla mouth it effectually prevents this plant from being fertilized.

A considerable number of flowers, especially of introduced plants, never set seed, for various often obscure reasons. In some cases however the failure is certainly due to the actions of insects who though taking pollen or honey fail to put the pollen on the stigma. An example is that of *Clerodendron macrosiphon* a native of Zanzibar. It is a shrub with long tubular white flowers with long projecting stamens. The flowers are evidently intended for fertilization by hawkmoths, but as it opens its flowers too early for them they are spoilt by the small Trigona bees who assiduously go round to each stamen and collect all the pollen, without touching the stigma, so that the plant has never so far as I have never seen here produced a single fruit.

H. N. Ridley.

Errata in " Descriptions of New Species of *Iphiaulax* and *Chaolta* (*Braconidae*) from Sarawak Borneo.

(Volume 42).

p. 26, 6th line from bottom for " and costa " read " and stigma "

p. 27, 8th line from bottom after " length" add ♂

p. 32, at commencement of 6th line from foot add " of radius "

p. 33, 14th line from bottom. After " apex " add ♀.

p. 36, 7th line from foot for " later " read " lateral "

p. 37, 11th line from top for " *Veneus* " read " *oeneus* "

p. 38, 16th line from foot after " crenulated " add " ♀ "

p. 40, 14th line from foot add *Iphiaulax nitidiusculus* sp. n.

p 41, 7th line from top before "tarsi" add "fore"
p. 41, 14th line from bottom for "*tafiae*" read "tibiæ"
p. 45, 15th line from bottom for "segments" read "segment"
p. 50, 6th line from top after "MM." add ♀.

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